Review of Utah Medicaid Nursing Home Bed Moratorium 1989-2001

Health Data Committee
Office of Health Care Statistics
Center for Health Data
Utah Department of Health

May 2002

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The IOM's Vision: A New Health System for the 21st Century

"The 21st-century health care system envisioned by the committee —providing care that is evidence-based, patient-centered, and systems-oriented—also implies new roles and responsibilities for patients and their families, who must become more aware, more participative, and more demanding in a care system that should be meeting their needs."

- Committee on Quality of Health Care in America, Institute of Medicine
Crossing the Quality Chasm: A New Health System for the 21st Century

Utah Health Data Committee Perspectives

"Access to quality health care in nursing homes and the affordability of these services are the aims of the Health Data Committee. The moratorium and subsequent analysis of the nursing home industry in Utah are aimed at maintaining the balance between access and costs. As a member of the Health Data Committee, I am encouraged that the steps taken since 1989 have and will continue to benefit the residents of Utah."

- Scott Ideson, Third Party Payer Representative
Regence BlueCross BlueShield of Utah

"Because of the complexity of the nursing home market and the constant changes in that market, it is vitally important to monitor the results of public and private policies and to be willing to reconsider adjustments in these policies."

- Robert Huefner, Public Health Representative
University of Utah, Governor Scott M. Matheson Center for Health Care Studies

"We want to be sure there are enough nursing home facilities of good quality in Utah. It's a major concern for seniors and their families."

- Sandra Peck, Consumer Advocacy Representative
League of Women Voters

Information and Data

"Information on long-term care services and resources should be available from a central or readily accessible source. Data for planning and monitoring long-term care should be available and used for system improvement and public accountability."

- Health Policy Commission, State of Utah
Final Report of the Long-Term Care Technical Advisory Group, 1999

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EXECUTIVE SUMMARY

Background

In January 1989, the Utah Department of Health (UDOH) implemented an emergency moratorium on the certification of new nursing home beds for participation in the state Medicaid program. The purposes of this action, implemented by an administrative rule, were to discourage proliferation of additional nursing care facility beds, to stabilize the nursing home industry in the late 1980s, and to gain a window of time in which the State of Utah could develop new policies for improving nursing home services in the 1990s.

Evaluation in 2001

- **The moratorium significantly slowed the construction** of nursing home beds in Utah. Since January 1994, only 355 additional nursing home beds were certified for Medicaid and Medicare participation.

- **Performance of the Utah nursing home industry, measured by its bed occupancy rate**, improved in the early 1990s. Occupancy rates have declined in recent years, from over 81.4% in 1997 to 76% in 2001 (from January to May). Utah's occupancy rate in 1998 (77.4%) was lower than the national average (83.5%), as well as the mountain states' average (80.9%). Occupancy rates in 2000 varied among individual Utah nursing homes (from 32% to 99%).

- **New competitive market forces** surfaced for nursing homes including Assisted Living (AL) II facilities, publicly funded community-based waiver/alternative programs, and a managed care demonstration project. Between January 1997 and May 2001, the number of AL II beds increased from 216 to 2,330. Approximately 200 nursing home patients were enrolled in the new Flex Care demonstration project by the end of 2001.

- **A noticeable impact of private payment on long-term care facilities emerged.** During 2001, Utah nursing homes with a higher percentage of private-pay patients had higher occupancy rates than those with fewer private-pay patients. However, the percentage of private-pay patients declined from 25% in 1997 to 21% in 2001.

- **Performance of nursing home and assisted living facilities varied by area.** On average, nursing homes in the Wasatch Front have lower occupancy rates than other areas of the state. However, the Wasatch Front AL I facilities have a higher average occupancy rate than other areas, except for Tooele and Wasatch counties. The occupancy rate gap between nursing home and assisted living facilities was smaller in the Wasatch Front than other areas as well.

- **A lower occupancy rate weakly relates to poor quality in a nursing home**, according to the analysis of deficiency data from the Medicaid/Medicare certification surveys from January 1997 to May 2001. Poor quality is measured by four proxy indicators: (1) the total number of deficiencies, (2) the overall severity of substandard quality of care deficiencies, (3) the maximum level of severity of deficiencies, and (4) the percent of deficiencies that represented substandard quality of care. Future study on nursing home quality also needs to include information from the complaint database and nursing home staffing data.

- **The current number of nursing home beds will be adequate** for the number of projected nursing home patients in 2005 given the following assumptions: (1) the utilization pattern remains the same as in 2000, (2) the projected statewide occupancy rate is 80 percent or higher, and (3) the growth rate of the population aged 65 and over is 8% between 2000 and 2005.

- **Limitations of the evaluation** - The evaluation has not been able to include the current nursing personnel shortage in the analysis. The work group did not evaluate Utah nursing homes' financial performance, because KPMG consultants conducted a financial study for UDOH in 1999. Further, neither patients' voices nor customer preferences have been presented in the analysis due to lack of available data.

Conclusion

Over the past twelve years, the Utah long-term care (LTC) market has become more complex and diverse. A variety of demographic and socioeconomic changes have also created a demand for new approaches to providing long-term care services. In recent years, Utah nursing facilities' performance (measured by occupancy rates and deficiencies) has been questioned in general. These changes and warning signs call for a departure from the "brick and mortar" moratorium strategy of guiding the long-term care industries.

The Utah Department of Health has taken initiatives to develop alternative solutions for cost-effective and patient-centered long-term care. However, these demonstration projects have not reached a "critical mass" to replace the moratorium's market control function at this time. Utah's long-term care market may not be ready to dramatically transform its construction-driven, market share approach into a patient-driven payment approach. The Health Data Committee has concluded that slow and incremental changes with tailored policies for different communities and patient populations will lead to a healthy transition and benefit long-term care consumers and providers in Utah.

The committee proposes that the Utah Department of Health periodically publish the following LTC indicators developed in this report:

- Capacity Indicator: Number of Beds
- Performance Indicator: Occupancy Rate
- Quality Indicator: Number of Certification Survey Deficiencies
- Projected Needs Indicator: Ideal Number of Nursing Home Beds at 90% or Higher Occupancy Rate.

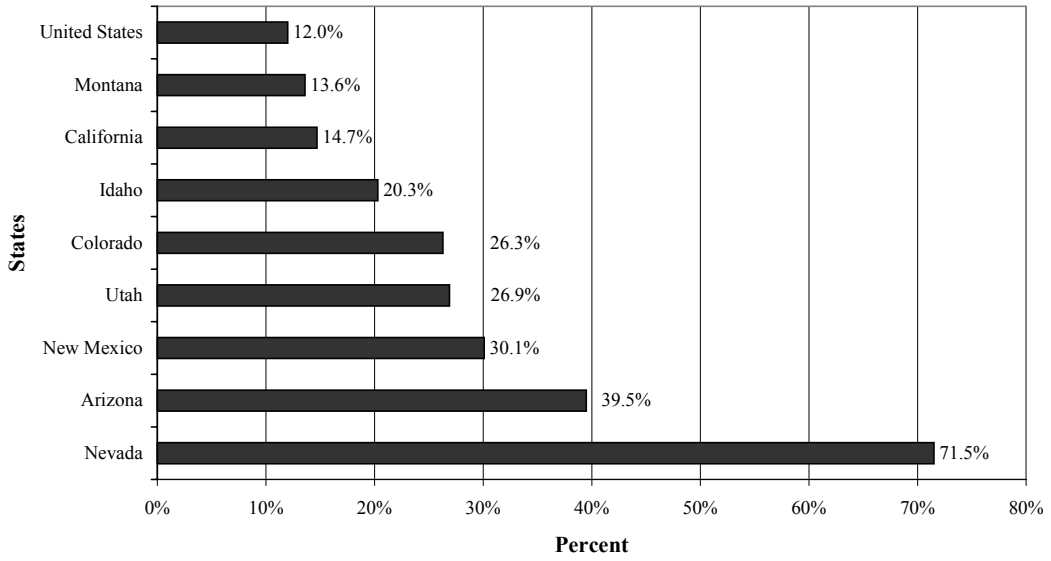
The committee promotes information-based decision making for the long-term care market among investors, providers, consumers and policy makers to develop and improve long-term care services in Utah. However, this review and the above indicators do not include patients' voices or customer preferences for future use of LTC. In order to provide comprehensive assessments to the LTC providers, developers, and policy makers, the committee recommends that the state conduct a population-based assessment of long-term care needs in 2005 and 2010 in Utah.

I. INTRODUCTION

Aging Population

According to 1990 and 2000 Census Bureau data, Utah is the second youngest state in the nation. Although the number of people 65 years and over increased by 40,264 statewide between 1990 and 2000, their proportion of the total state population dropped from 8.7 percent in 1990 to 8.5 percent in 2000. Two Utah cities, Provo and West Valley City, ranked in the top ten nationally as places with the lowest share of their population 65 years and over.[1] Nevertheless, Utah is considered the sixth fastest growing state in its aging population. The population of those age 65 years and over increased from 149,958 in 1990 to 190,222 in 2000, a 26.9 percent change. Similar increases among other intermountain states fuel the upsurge of the older population in the West (see Figure 1 and Appendix A).

Figure 1. Percent Change in Population 65 Years and Over: U.S. and Selected States, 1990-2000

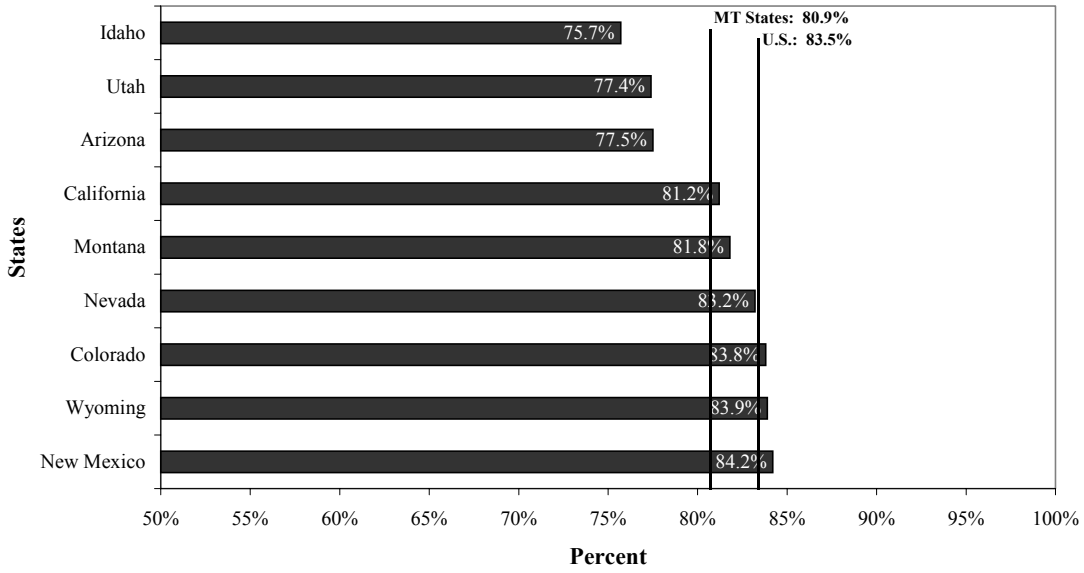


Source: U.S. Census Bureau 2000 Summary File 1. Internet release: October 3, 2001.

Use of Nursing Home Care

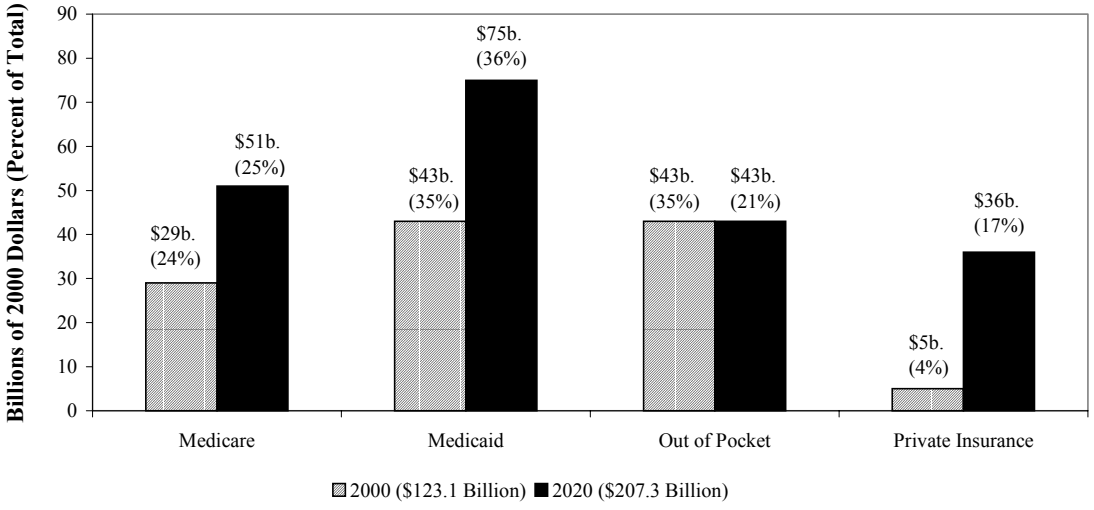
Long-term care includes rehabilitation, home care, assisted living, and full nursing home services.[2] Nursing homes are an important component of long-term care. With its young population, Utah has low utilization of nursing home facilities. In 1994, Utah ranked 46th nationally in nursing facility use, with 4.15 percent of its population age 65 and over in nursing home facilities. For the same year, Utah ranked 48th in occupancy rate of nursing home beds (85.4%).[4] In the past decade, nursing home utilization has not significantly changed. During the first six months of 2001, approximately 9,500 people, or 4.32 percent of persons age 65 and over, were in long-term care facilities.[3,4] Based on the latest available national data, Utah's occupancy rate of nursing home facilities was 77.4 percent in 1998, lower than Arizona (77.5%), California (81.2%), Montana (81.8%), Nevada (83.2%), Colorado (83.8%), Wyoming (83.9%), New Mexico (84.2%), and slightly higher than Idaho (75.7%) (see Figure 2).[5]

Figure 2. Occupancy Rate of Nursing Facilities: Utah and Selected States, 1998



Source: Health, The United States, 2000. Table 113. National Center for Health Statistics, 2000.

Figure 3. Projected Spending on Long-Term Care for the Elderly by Payer: U.S., 2000 and 2020



Source: Congressional Budget Office, "Projections of Expenditures for Long-Term Care Services for the Elderly" (Washington: CBO, March 1999).

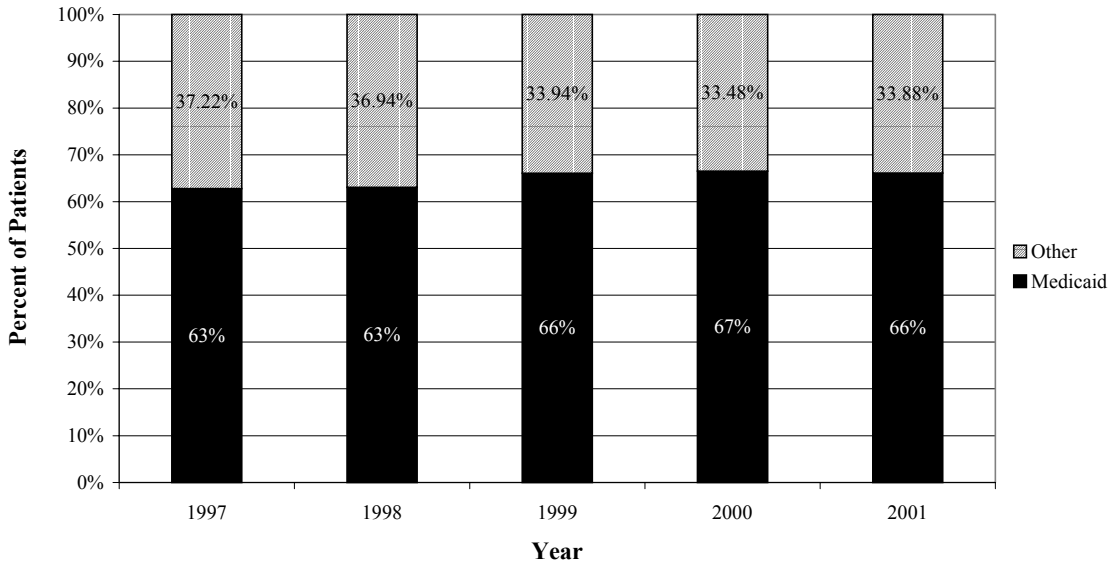
Referenced by Judith Feder et al. 2000. "Long Term Care in the United States: An Overview." Health Affairs: Vol. 19, No. 3: 40-56.

Increase of Public Spending on Nursing Home Care

Over the past three decades, health care spending increased more for the elderly than for persons under age 65.[6] Federal and state governments have been the primary reimbursement sources for nursing homes in the United States. Medicare spending on long-term care has been projected to increase from $29 billion in 2000 to $51 billion in 2020. Further, Medicaid spending will increase from $43 billion to $75 billion between 2000 and 2020 (see Figure 3, previous page).[7]

Careful review of current public policies related to long-term care, especially the Medicaid program, is becoming an urgent issue for state policy makers. Medicaid members comprise approximately two-thirds of total nursing home patients (63.4% in 1997 versus 66.5% in 2001). As shown in Figure 4, the Medicaid program is the major payment source for nursing home facilities. Therefore, the Utah Department of Health has been playing a leading role in shaping public policies for long-term care in Utah.

Figure 4. Percent Nursing Home Patients by Payment Type: Utah, 2001



Source: Nursing Home Census Database, Utah Bureau of Program Certification and Resident Assessment.

Purpose and Perspectives of the Report

Long-term care (LTC) is a complex system. It includes different types of industries, multi-level health care providers, and corresponding public policies for health facility licensure, reimbursement rates, and public programs targeting the diverse needs of different populations. This report does not examine the entire spectrum of issues related to long-term care in Utah. Its focus is the descriptive analysis of the impact of the Utah Medicaid nursing home bed moratorium regulation. It is intended to provide a background review and baseline information for future comprehensive evaluation or policy development related to long-term care in Utah.

This report is a joint effort conducted by three agencies within the Utah Department of Health, reflecting three perspectives:

- The Health Data Committee and Office of Health Care Statistics are responsible for providing objective health care baseline information to the public, and for developing indicators to monitor and publicly report health care utilization, quality, market performance, and patient/consumer preference and satisfaction. This report enables the committee to develop and report the first set of indicators for long-term care in Utah.

- The Division of Health System Improvement (HSI) is responsible for assuring health system capacity, stability, and improvement. The policies of nursing home facility licensure and resident assessment are associated with other long-term care industries' development and performance. This report, for the first time, evaluates the nursing home moratorium in relation to the growth of assisted living facilities in Utah. The report provides useful information for HSI's future LTC policy development.

- The Executive Director's Office Flex Care Demonstration Project and the Division of Health Care Financing (HCF) have developed a comprehensive array of LTC services and delivery settings to allow eligible Medicaid nursing home clients to receive needed services at the appropriate time in an appropriate setting. To be able to decide when and how to promote this demonstration project, the Department needs to know the current utilization and quality of nursing home care in the state. When is an appropriate time to expand the demonstration project into a statewide program? Which geographic areas are more suitable for this new LTC initiative? This report identifies some baselines and potential problem areas for the Executive Director and HCF to consider.

The Health Data Committee has discussed this report in three of its meetings since 2001. The preliminary analysis of the report was presented to the Health Facility Committee and the Utah Health Care Association. Their input and comments have been incorporated into the report. However, due to limited resources to develop this report, the patient/consumer's voice, assisted living, and other LTC industries' perspectives have not been formally solicited.

Definitions and Data Sources

What is a Nursing Home or Nursing Facility?

In this report, a nursing home or nursing facility is defined as having at least three beds, and being either certified by Medicare or Medicaid, or licensed by a government agency as a nursing care facility. A total of five types of nursing facilities are licensed and/or certified by the Medicare and/or Medicaid programs in Utah. Table 1 presents the number of nursing facilities in 1989 and 2001. The analysis in this report focuses on the 82 Medicaid/Medicare certified Skilled Nursing Facilities/Nursing Facilities (SNF/NFs), Nursing Facilities (NFs), and 17 hospitals with swing beds (SBHs) in Utah.

Table 1. Number and Type of Nursing Facilities Certified by Medicare and Medicaid Programs: Utah, 1989 and 2001

Type of Facility	Number in 12/1989	Number in 5/2001	Net Change
Total Medicare/Medicaid certified SNF, NF, SNF/NF, or IMR facilities	**122**	**123**	**1**
Medicare/Medicaid certified skilled nursing facility (SNF/NF)	71	71	0
Medicare certified skilled nursing facility (SNF) (Includes TCUs*)	1	10	9
Medicaid certified nursing facilities (NF)	18	11	(7)
Medicaid intermediate care facility for the mentally retarded (IMR)	13	14	1
Medicaid certified swing beds in rural hospitals (SBH)	19	17	(2)

* TCU means Transitional Care Unit in a hospital. It is licensed as a skilled nursing facility and certified by the Medicaid and/or Medicare Programs.

Sources: The Bureau of Program Certification and Resident Assessment, Utah Department of Health.

What is a "Bed"?

A crude measure of the capacity of the long-term care system in Utah is the number of beds in the system. There are several possible sources of data about the number of beds. Each source has a specific definition of a "bed". The UDOH Bureau of Licensing is responsible for evaluation and determination of the official licensed capacity of nursing care facilities, and reports the number of licensed beds. However, over time, facilities may deactivate beds or pre-empt patient rooms for other uses. Thus, the number of beds actually available for patient use may differ from the official licensed number (see Appendix B for details). The Bureau of Program Certification and Resident Assessment is responsible for evaluating and determining compliance of nursing care facilities with federal and state conditions of participation in Medicare and Medicaid programs. Facilities may be certified for either Medicaid or Medicare, or both, for all or part of their licensed beds. The number of certified beds is usually the same as the number of licensed beds, but not always. For example, six of the nursing facilities have fewer certified beds than licensed beds; the rest of the facilities have the same number of licensed and certified beds. Three types of beds are discussed in this report:

- **Licensed Beds (Licensed Capacity):** The number of beds allowed in a nursing care facility, based on the State Code in effect at the time of licensing.

- **Certified Beds (For Medicare/Medicaid Reimbursement):** The number of beds that can be occupied by patients for whom the facility receives reimbursement for care from Medicaid or Medicare.

- **Available Beds (For Patient Use):** The number of beds actually available for patient use in a nursing facility.

Data collected by the Bureau of Licensing in March 2002 (see Table 2 and Appendix B) illustrates the differences in total bed numbers that arise from the three definitions of bed. While the licensed capacity of nursing care facilities was 7,741 beds, facilities reported that there were only 7,105 beds actually staffed and available for patient use. This represents a

difference of 636 beds, or 8.2 percent of licensed capacity. There were 7,511 certified beds, 230 less than the licensed capacity, but 406 more than were reported to be actually available, a 5.8 percent difference.

Table 2. Number of Long-Term Care Beds According to Three Definitions of "Bed": Utah, 2002

Definition of Bed	Data Source	Date Reported	Number of Beds
Licensed Beds	Bureau of Licensing, nursing facility licenses	January 15, 2002	7,741
Certified Beds	Bureau of Program Certification and Resident Assessment, monthly census report	January 31, 2002	7,511
Available Beds	Bureau of Licensing, telephone survey	March 2002	7,105

Are the differences in total number of beds important? Clearly, because of the multiple definitions, it is not possible to report one consistent number of long-term care beds at any given time. Our concern is whether the long-term care system is adequate to meet the needs of Utah citizens. Later in this report we will discuss occupancy rates, which may be a better measure of the adequacy of the system than its bed capacity.

Data Sources

The information presented in this report is drawn from four Utah Department of Health databases:

1. Nursing home and Assisted Living Licensing Databases, managed by the Bureau of Licensing (BOL)

2. Nursing Home Medicaid/Medicare Census Database, managed by the Bureau of Program Certification and Resident Assessment (BPCRA)

3. Assisted Living Facility Census Database, managed by the Bureau of Licensing

4. The U.S. Department of Health and Human Services' Center for Medicare/Medicaid Services (CMS) OSCAR Utah database (information requested through the Utah BPCRA)

This report has gathered a variety of data from diverse sources and agencies. Data were not collected in a standard format. In many cases, the data sources are not comparable to one another. We cautiously evaluated the data quality and only used reliable data for this report. Standardized, electronic data were only available since 1997. Hence, the trend analysis in this report is conducted from 1997 to 2001. In addition, facility records across the different databases were linked according to the need for facility-level analysis.

II. MEDICAID MORATORIUM IN A CHANGING ENVIRONMENT

1989: The Moratorium Implemented

In 1974, the United States Congress directed states to establish certificate-of-need (CON) programs, which required governmental approval for new nursing facility beds and services.[8] This federal requirement was terminated in 1986. The Utah law on CON expired on December 31, 1984. The number of nursing home beds for skilled and intermediate care grew from 5,395 in 1984 to 7,145 in 1990, representing an increase of 1,750 beds. Nursing home occupancy rates declined from 89.0% in 1984 to 74.6% in 1988. Meanwhile, profit margins in the nursing home industry declined substantially.[9] The State of Utah was also at risk for potential lawsuits due to the level of reimbursement under the Boren Amendment*.[10]

On January 13, 1989, the Utah Department of Health declared an emergency moratorium on new Medicaid-certified nursing home bed construction (Utah Administrative Rule R455-07A). The moratorium affects Medicaid participation only, and does not apply to or affect beds financed by private-pay, Medicare or other non-Medicaid sources, or hospital "swing-beds"†. The reasons for implementing the moratorium were:

- to discourage proliferation of additional nursing care facility beds;
- to stabilize the nursing home industry and assure patients of a stable place of care;
- to give the state an opportunity and resources to develop alternative solutions for a better long-term care system.[10]

Governor Norman H. Bangerter commissioned a task force on long-term care "to study and make recommendations on alternative strategies the state could employ in addressing the oversupply of nursing home beds and the long-term financial viability of the long-term care industry".[9] In July 1990, the task force presented six recommendations to Governor Bangerter. One of the recommendations stated:

> "*The existing moratorium on the Medicaid certification of new nursing home beds should not be lifted until another mechanism to control the supply of Medicaid nursing home beds is in place.*"[9]

The task force also recommended that a Request for Proposal (RFP) system should be established for the purpose of procuring additional nursing home beds for the Medicaid program. This recommendation was implemented in Washington County in 1991-1992 to address the community's need for additional nursing home beds.[10]

Utah was not the only state using traditional cost-control mechanisms to control nursing home bed supply. By 1991, a total of 44 states had either a CON program and/or a moratorium in place[11] to limit or evaluate the supply of nursing home beds.

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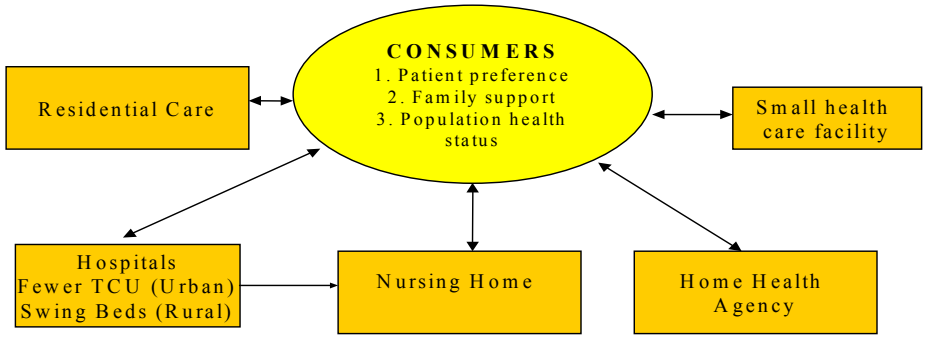
* The Boren Amendment was passed in 1980 to require states to reimburse Medicaid providers using rates that were "reasonable and adequate to meet the costs which must be incurred by efficiently and economically operated facilities." A number of nursing facilities and their associations filed lawsuits against states under the Boren Amendment.[8] The Boren Amendment was repealed in 1997.

† "Swing bed" means a hospital bed that is licensed and/or certified for both acute care and long-term care use.

When the Medicaid moratorium was implemented, the long-term care market in Utah was not complex. Figure 5 shows that nursing homes were the major facilities providing institutionalized nursing care for patients in 1989. Small health care facilities, residential care facilities, and home health agencies were in place, but they served only a small portion of the elderly population. Fewer hospitals had transitional care units (TCUs) and swing beds for long-term care patients. Furthermore, there was little interaction among health care providers that centered on patients' long-term care.

Figure 5. Long-Term Care Market: Utah, 1989



Use of long-term care services is also influenced by patient/consumer preference, availability of family support or network in a community, and the health status of the older adult population. Utah has a history of low utilization of long-term care facilities, which may be related to the emphasis on family and community support in the local culture.

1996-1999: Moratorium Mid-Term Reviews

Various evaluations of certificate-of-need (CON) programs and moratoriums have been conducted nationally and locally. Harrington et al. examined the effects of state CON and/or moratorium requirements on the change in nursing home bed growth in 50 states over a 13-year period (1979-1993). They reported significant growth reductions in nursing home beds among states under the auspices of a CON program or moratorium.[11] Rhoades and Krauss' analysis, *Nursing Home Trends, 1987 to 1996,* demonstrated that despite an increase from 1987 to 1996 in the number of nursing homes and nursing home beds, the supply of beds for the population 75 and over has declined. Nonetheless, nursing home occupancy rates also declined. This suggests that the long-term care needs of the elderly were increasingly being met outside of nursing homes.[12] Meanwhile, nursing homes are caring for an older population. Functional disability of this population has also increased. Eighty-three percent of nursing home residents in 1996 needed help with three or more activities of daily living, compared to almost 72 percent in 1987.[12]

In 1996, the Utah Department of Health employed an external consultant, Dennis McFall, to conduct an evaluation of the Medicaid moratorium in Utah. The consultant asked three specific evaluation questions:

1. Is the existence of the moratorium causing any difficulty in accessing needed care due to a chronic shortage of beds in any community or catchment area?

2. Is there any indication that a community is experiencing unfair pricing related to private patient admissions due to the protection from competition afforded current nursing home operators by the Medicaid moratorium?

3. Is the Medicaid moratorium continuing to serve the expressed purpose for which it was created? If not, what recommendations might be made to improve or replace it?[13]

McFall identified several rural communities that experienced chronic high occupancy of nursing home beds. He found no evidence of Medicaid versus private-pay price differentials related to the moratorium. He also concluded the Medicaid moratorium did not eliminate growth in Medicaid bed certification. However, it was successful in slowing growth. It has done so by restricting entry of new providers/facilities into the Utah Medicaid Program (see Table 1). On the other hand, it has not controlled expansion of the size of existing facilities run by current providers at existing locations. This evaluation also pointed out that industry competition stagnated and marginal operations continued to exist under the moratorium. According to McFall, there did not appear to be a better alternative to the moratorium at that time. Therefore, McFall did not recommend abandoning the moratorium in 1996. Instead, he suggested that as conditions change, it might be appropriate to adopt a managed-care approach to long-term care in Utah.[13]

Two more informal evaluations were conducted in 1999. KPMG consultants used 1997 Utah Medicaid data to study nursing home profitability. They found that there appeared to be a correlation between occupancy rates (up to 94 percent) and profitability among SNF/NF facilities. In 1997, 56 out of 78 (72%) SNF/NF facilities had financial gains. Twenty of the 56 (36%) facilities had occupancy rates below industry average (82%) in the state, while 36 of 56 (64%) facilities maintained occupancy rates equal to or greater than state average.[14]

As requested by the Health Care Financing Re-basing Committee, the Utah Bureau of Program Certification and Resident Assessment (BPCRA) compared changes in certified beds and occupancy rates from 1988 to 1998 (see Table 3). The total number of Medicare/Medicaid certified beds increased from 6,986 in 1988 to 7,246 in 1998, resulting in an increase of 260 certified beds, while the total number of certified Medicare/Medicaid nursing facilities in 1998 decreased by six since 1988. The statewide average occupancy rate increased 2.6 percent in 1998 from that in 1988. Based on BPCRA's information, the Re-basing Committee concluded the moratorium was generally working but needed modification.[10]

Table 3. Medicaid Certified Facilities (SNF/NF, SNF, NF), Beds, and Occupancy Rates in Nursing Homes: Utah, 1988 and 1998

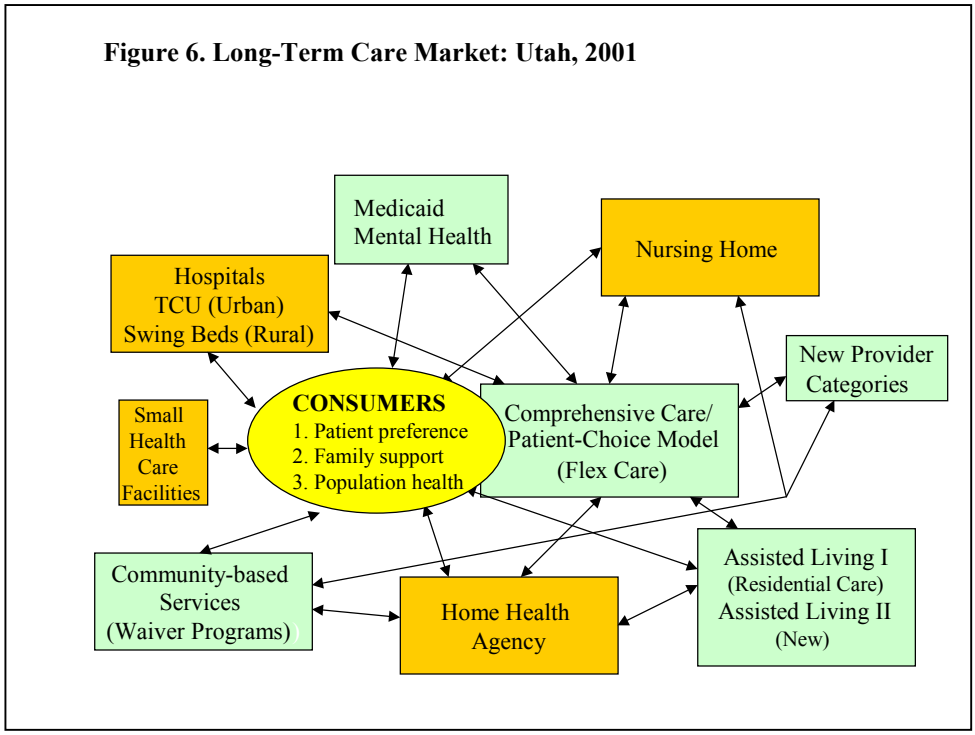
	1989	1998	Net Change	% Change
Total Number of Certified Facilities	90	84	-6	-6.66%
Total Number of Certified Beds	6,986	7,246	+260	+3.72%
Total Number of Patients (BPCRA Census)	5,305	5,692	+387	+7.29%
Occupancy Rate (%)	75.93%	78.55%	+2.62%	+3.45%

Sources: The Bureau of Program Certification and Resident Assessment, Utah Department of Health. Internal paper report. The numbers in Table 3 are not consistent with the numbers in Table 8. The differences are due to different data collection methods at the time of the studies.

2001: Moratorium in a Changed Environment

The Utah long-term care market in 2001 has become more complex than it was in 1989. Figure 6 illustrates the 2001 market.

Figure 6. Long-Term Care Market: Utah, 2001



- **More players** entered the market in the 1990s, including AL II facilities, community-based services (through the federal waiver programs), Medicaid pre-paid mental health care programs, and the Flex Care Program (a new initiative of the comprehensive care/patient-choice model for Medicaid patients).

- **More options** for patient care have become available. Consumers can choose long-term care services from four types of institutional providers (AL I facilities, AL II facilities, nursing homes, and transitional care/swing bed hospitals) and two new Medicaid long-term care initiatives (the Flex Care and Waiver Programs).

- The Flex Care Program was established in 2000 to address "how services are delivered to seniors with chronic medical conditions so they do not become trapped in nursing facilities for lack of options to safely return them to the community".[15] By bundling together a number of Medicaid waivers, UDOH has developed the Flex Care Program, which pays for housing (generally assisted living) and personalized medical care designed to maintain the individual in the community. These are individuals that have more complex medical needs than those served in the Long-term Care Waiver program operated by County Area Agencies on Aging under contract with Medicaid. As of December 31, 2001, Flex Care has successfully serviced about 200 LTC patients. It has been projected that Flex Care could enroll approximately 20% of current nursing home patients within two or three years.[15] In the Flex Care model, unlike under the Medicaid moratorium, the state's responsibility resides with patient well-being and the public sector's financial affordability, instead of industrial solvency. Recently an independent party has been conducting an evaluation of Flex Care. Results will be available at a later time.

- Home and Community Based Medicaid Waiver and Alternative Programs have been implemented by the Utah Division of Aging and Adult Services and the Area Agencies on Aging since 1992. These programs have provided services to frail elderly citizens to prevent or delay placement in a nursing facility. Over the past several years, the average stay in both programs has been approximately 270 days. The number of enrollees in these programs increased from 1,003 in 1992 to 1,983 in 2000. As a result, it is reasonable to assume that the community-based alternative programs have affected the need for nursing home beds.

- **More complicated interactions** among providers and public programs occurred in 2001 than in 1989. The Flex Care Program interacts with all providers centered on patient care. Nursing homes interact with Flex Care. Nursing care demand is impacted by the community-based services. AL facilities interact with home health agencies and Flex Care. Medicaid managed care mental health plans also provide health care services to LTC patients in Flex Care.

- **New provider categories** include adult foster care homes, personal care attendants, respite care providers, paid family members, personal emergency response systems, assistance technology, and environmental adaptations and modifications. Although their impact on the use of nursing homes has not been evaluated, it is assumed that these services are improving access to long-term care for special populations.

2002 and Beyond: New Approaches of Long-Term Care

Before enactment of the Medicaid nursing home bed moratorium in 1989, the primary approach to care in the nursing home industry was the "brick and mortar" structural model.

Recent literature reveals new approaches to long-term care in the 21st century, such as:

- service delivery to most appropriate settings,
- "continuum of care" and "age in place",
- consumer-oriented, "homelike care",
- integration of health care and housing, and
- "community integration".

The concepts of "continuum of care", "age in place" and "homelike care", as demonstrated by Rich Seibert[16] and other researchers, will resonate with future seniors. A growing number of seniors are interested in a retirement community that allows them to move from residential apartment, to assisted living, to skilled nursing care without making major moves. The whole notion of allowing persons to "age in place" means bringing services to them in their homes, wherever they may be, as they become more disabled.[17]

The integration of health care and housing means developing a system where health care services and housing are available as part of a combined service package. In other words, the person receives public assistance to cover the cost of rent/mortgage and access to publicly funded health care services if needed (such as home health care). One key feature is the extra assistance available to consumers. Some examples include: health care services delivered to the place of residence (such as an apartment building), specialized transportation used for travel to health care providers, trained personnel to help make personal appointments, etc. Another key to the system is its flexibility. A person does not have to need health care services in order to qualify for housing assistance. Rather, health care services are available whenever they are needed.

"Community Integration" means providing housing and health care services that support the person as an active member in the neighborhood and community if this is the individual's desire. It gets back to the idea that we should not require people to go to institutions where they lose contact with their families, friends, churches, and community groups, as long as we can provide appropriate services in their current place of residence. It also goes back to the idea that we need to provide more than just medical services; we need to take a holistic approach that looks at the need for housing, recreation, socialization, and transportation.

The changed environment and consumers' preferences challenge the "business as usual" approach. A close look at the current capacity, utilization, and quality of long-term care in Utah is urgently needed to review the Medicaid moratorium and revise LTC public policies.

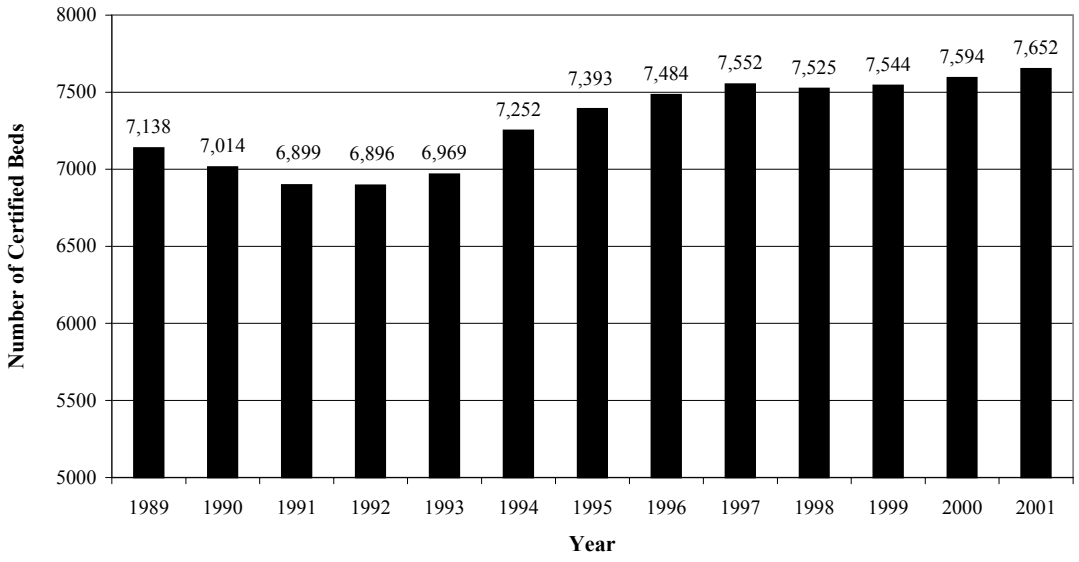
III. CRUDE CAPACITY INDICATOR: NUMBER OF BEDS

It is commonly accepted that the total number of licensed beds in a facility is used as a capacity measure of the facility, and the total number of licensed beds in a state is used as a nursing capacity measure of a state.[8] Some researchers have claimed a "decline in nursing home utilization over the past two decades".[18] Changes in long-term care (LTC) service use have been reported by national studies, as well. A comparison of surveys showed that 4.2 percent of the elderly population were nursing home residents in 1995, compared with 4.6 percent in 1985. This decrease in nursing home use might be related to increased use of supportive housing arrangements (i.e. assisted living).[7]

Nursing Home Bed Construction

One goal of the moratorium on certification of Medicaid beds was to stabilize the long-term care system by slowing the increase in number of beds. As noted earlier, unimpeded growth was believed to be a threat to the system, primarily because the capacity of the system would exceed the number of potential consumers for nursing home beds. The change in the number of certified Medicaid/Medicare beds between 1989 and 2001 is shown in Figure 7. There was a decline in beds in the three years after the moratorium was imposed, then a period of growth during the mid-90s. From 1997 to 2001, only 100 Medicaid/Medicare certified beds were added in nursing facilities in Utah, which is a 1.3 percent net growth. Over the entire 13-year period, there was a net growth of 514 beds, which represents a 7.2 percent increase in capacity. The population of those over age 65 in Utah grew from 147,068 to 190,222, a 29.3 percent increase, during the same period (1989 to 2001).

Figure 7. Number of Medicaid/Medicare Certified Nursing Home Beds: Utah, 1989-2001



Source: Nursing Home Census Database, Utah Bureau of Program Certification and Resident Assessment.

Figure 8 (next page) shows a breakdown of the certified beds into Medicaid-only (Nursing Facilities), Medicare-only (Skilled Nursing Facilities), and facilities that are certified for both Medicare and Medicaid (NF/SNF). The net change in Medicaid-certified beds since 1989 is 331; that is, there are 331 fewer Medicaid-only certified beds today than in 1989. Medicare-only certified beds increased by 327, while 442 beds certified for both Medicaid and Medicare were added during the same period.

Greater detail about the change in certified beds, from January 1997 through April 2001, can be seen in Figure 9 (next page). The total net change over this five-year period was plus 77 beds for Medicare and minus 55 beds for Medicaid. Facilities certified for both Medicare and Medicaid patients gained 98 beds.

Licensed Capacity of Long-Term Care in Utah

The licensed capacity of a facility is the number of beds allowed to be present, based on square feet of space in the patient care area, under the Utah Code at the time the facility is licensed. As noted earlier, licensed capacity does not necessarily reflect the Medicare/ Medicaid certified capacity and the actual number of beds staffed and ready for patient use. Licensed capacity of the long-term care system is divided into several license categories, as shown in Table 4. The table illustrates the number of facilities and total beds in each category.

Table 4. Licensed Facilities and Beds: Utah, March 2001

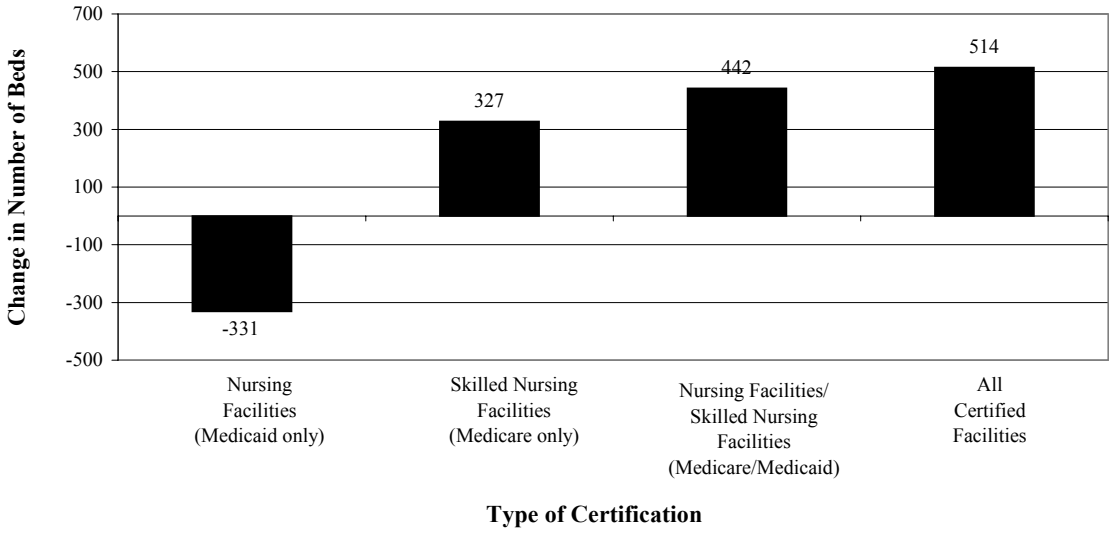
License Type	Number of Facilities	Number of Beds
Assisted Living – Type I	104	1,827
Assisted Living – Type II	44	2,462
Intermediate Care for Mentally Retarded	13	804
Nursing Care Facility	84	7,618
Small Health Care Facility	7	21
Swing Bed Hospital	18	402
Transitional Care Unit	11	171
Total	**281**	**13,305**

Source: Utah Bureau of Licensing database, April 2002

Expansion and Replacement of Existing Nursing Care Beds

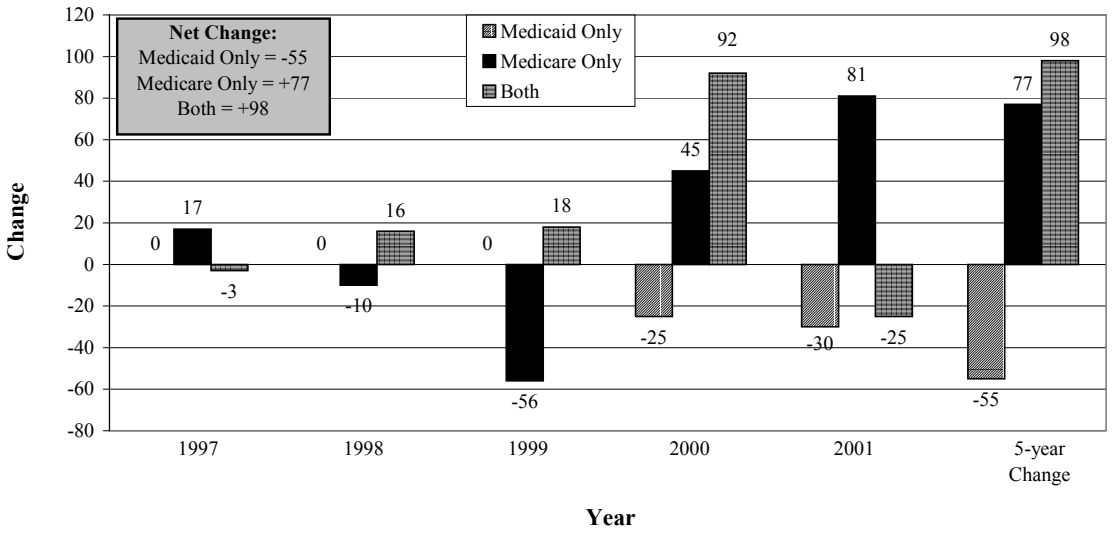
Another measure of bed capacity change can be drawn from a review of additions to or replacement of beds in existing nursing care facilities. Data from the Bureau of Licensing show that 419 beds were added or replaced in existing licensed nursing care facilities, from January 1997 through April 2001. Figure 10 (page 25) shows the number of beds added each year.

Figure 8. Net Change Between 1989 and 2001 in Number of Medicare/Medicaid Certified Beds by Type of Certification: Utah



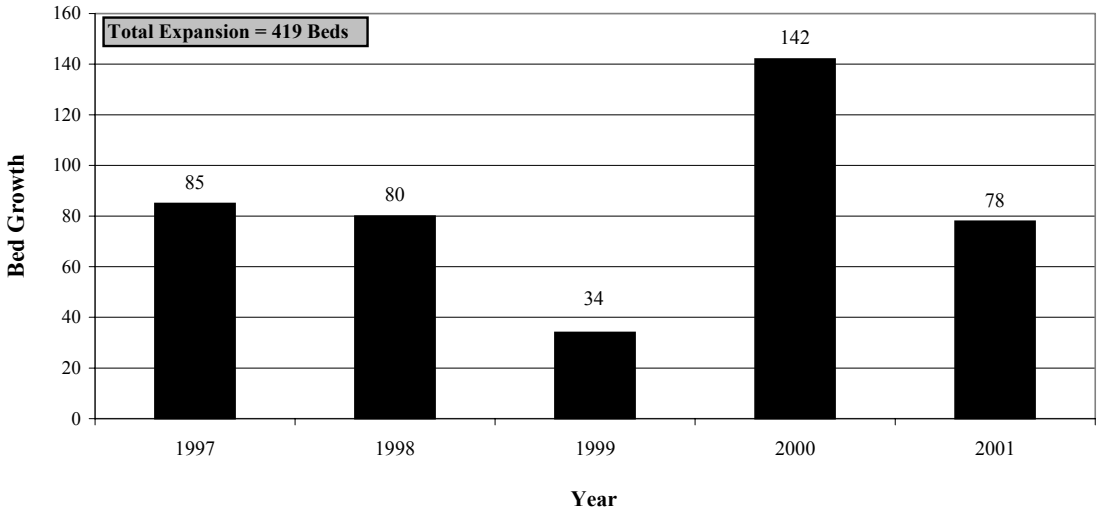
Source: Utah Bureau of Licensing's Construction Report and Utah Bureau of Program Certification and Resident Assessment.

Figure 9. Change in Total Number of Medicaid and Medicare Certified Beds: Utah, January 1997 - April 2001



Source: Monthly Home Census, Bureau of Program Certification and Resident Assessment.

Figure 10. Bed Growth from Expansion or Replacement of Existing Nursing Facilities: Utah, 1997-2001

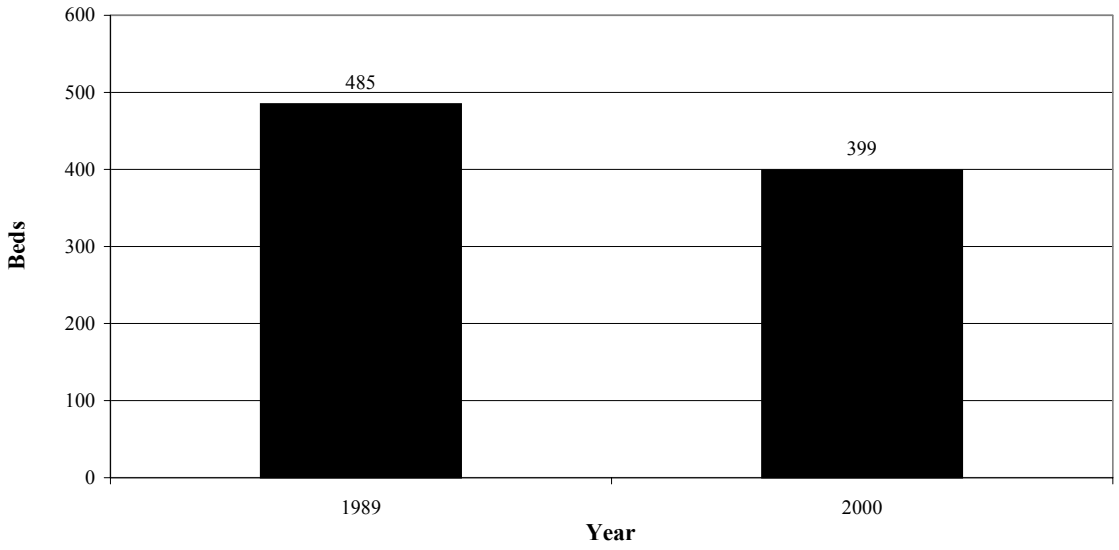


Source: Bureau of Licensing, Utah Department of Health, 2001.

Summary of Nursing Home Capacity Analysis

As noted previously, it is difficult to determine the exact capacity, or number of beds, in nursing homes in Utah. Nursing homes are dynamic organizations existing in a volatile market. Frequent changes in facility names and ownership make tracking difficult. Data sources for this information are from operational systems that are not designed to manage or provide aggregate data. Nevertheless, it is possible to conclude that nursing home capacity has been relatively stable since 1989. Since 1989, there are fewer additional Medicaid-only certified beds, but more Medicare-only and dual (Medicare and Medicaid) certified beds. Since 1997, 419 beds have been added to licensed nursing facilities, but many of these replaced existing beds. Finally, it is helpful to look at nursing home capacity in terms of population growth. The population of those over 65 grew from 147,068 in 1989, to 190,222 in 2000. During that period the number of certified beds per 10,000 persons 65 and over dropped from 485 to 399 (see Figure 11). However, as will be seen in the next section, another category of long-term care beds grew dramatically in the latter part of that period.

Figure 11. Certified Beds Per 10,000 Persons Aged 65 and Over: Utah, 1989 and 2000



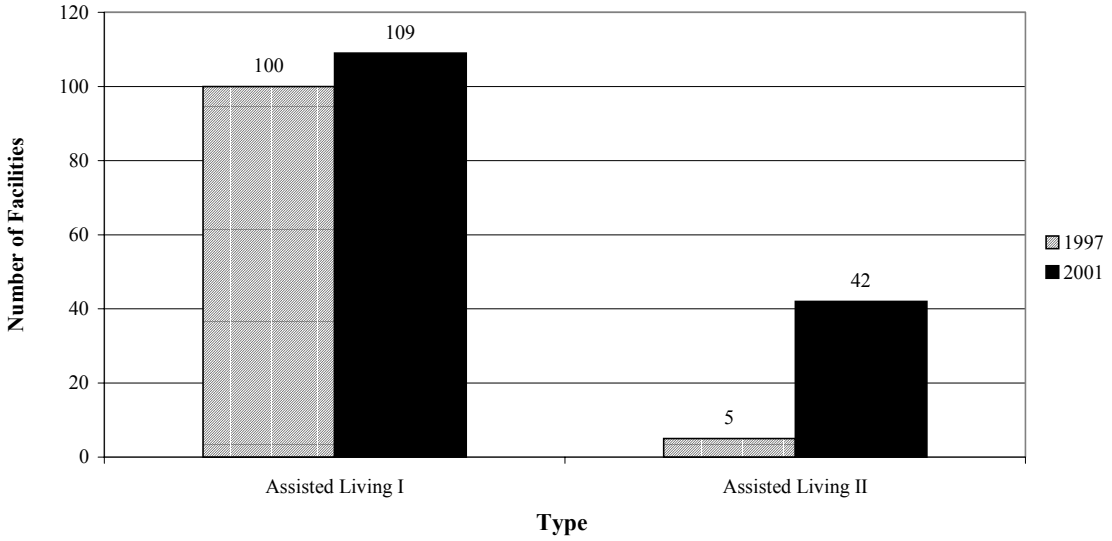
Source: Bureau of Program Certification and Resident Assessment, Utah Department of Health, 2001.

Assisted Living Bed Construction

In contrast to the minimal growth of nursing home capacity, assisted living facilities grew dramatically in the late 1990s. Figures 12 and 13 (next page) illustrate the striking growth between 1997 and 2001 in the Assisted Living II category, both in number of facilities and number of beds. While the Assisted Living I category grew by only 34 beds, over 2,000 beds were added in the AL II category.

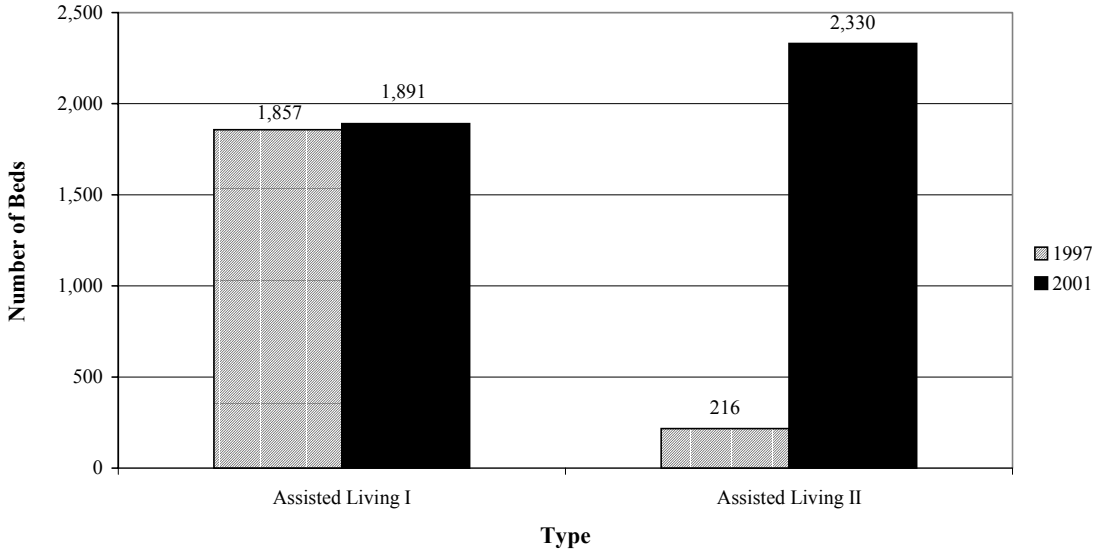
Between 1996 and 2001, there was an increase of 512 Assisted Living I beds and 2,103 Assisted Living II beds (see Figure 14, page 28). Construction plans approved by the Bureau of Licensing in September 2001, indicate that another 24 AL I and 375 AL II beds will be added soon.

Figure 12. Number of Assisted Living Facilities: Utah, 1997 and 2001



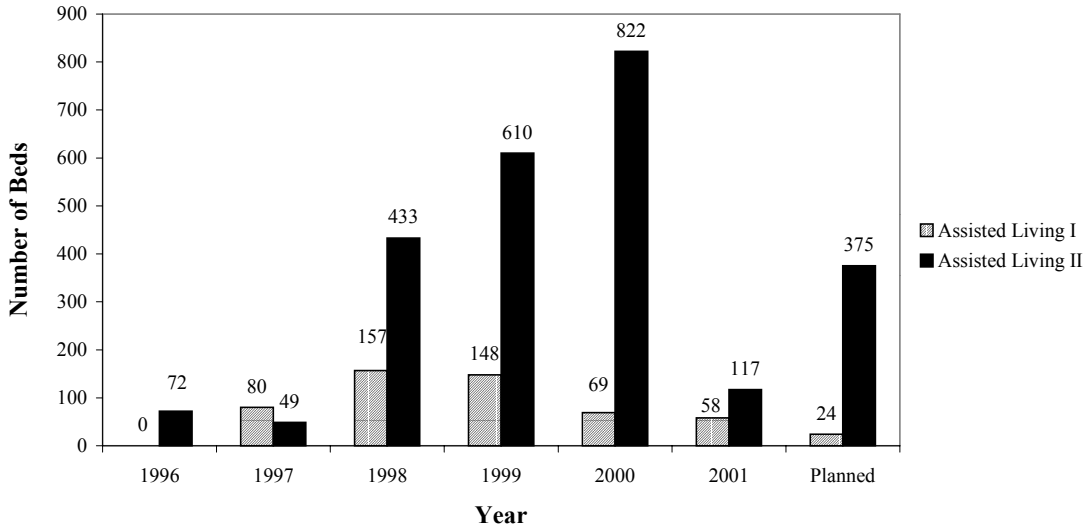
Source: Bureau of Licensing, Utah Department of Health, 2001.

Figure 13. Number of Assisted Living Beds: Utah, 1997 and 2001



Source: Bureau of Licensing, Utah Department of Health, 2001.

Figure 14. Assisted Living Bed Construction (Planned): Utah, 1996 - 2001



Source: Bureau of Licensing, Utah Department of Health, 2001.

Summary of Assisted Living Capacity Analysis

We noted previously that nursing care facility beds increased by only 1.3 percent between 1997 and 2001. In contrast, 2,148 assisted living beds were added during the same period. Most of the growth was in the Assisted Living II category, which grew by 979 percent in beds and 740 percent in facilities. Despite this remarkable growth, occupancy rates in assisted living facilities averaged 70 percent in early 2001. (Occupancy data are presented in the next section.) Several factors may explain these findings. Unlike nursing homes, the assisted living component of the long-term care market is not subject to cost-containment measures such as the moratorium. Most patients are private-pay, because federal and state programs (except for Flex Care and Waiver programs) do not pay for assisted living stays. Nevertheless, because AL facilities are generally newer and are designed to have a "home-like" atmosphere, they are an attractive alternative for patients at the upper end of the care-need continuum. For persons who can no longer live independently, an assisted living facility is more acceptable than a nursing home. It is commonly believed that such persons may choose to "spend down" their assets in an assisted living facility, and then, when assets are exhausted, move to a nursing home where Medicaid will assume the cost of care. Whether this is true or not, the data presented here indicate that assisted living is a rapidly growing and consumer-valued option in the long-term care market.

IV. PERFORMANCE INDICATOR: OCCUPANCY RATE

Occupancy Rate as an Indicator

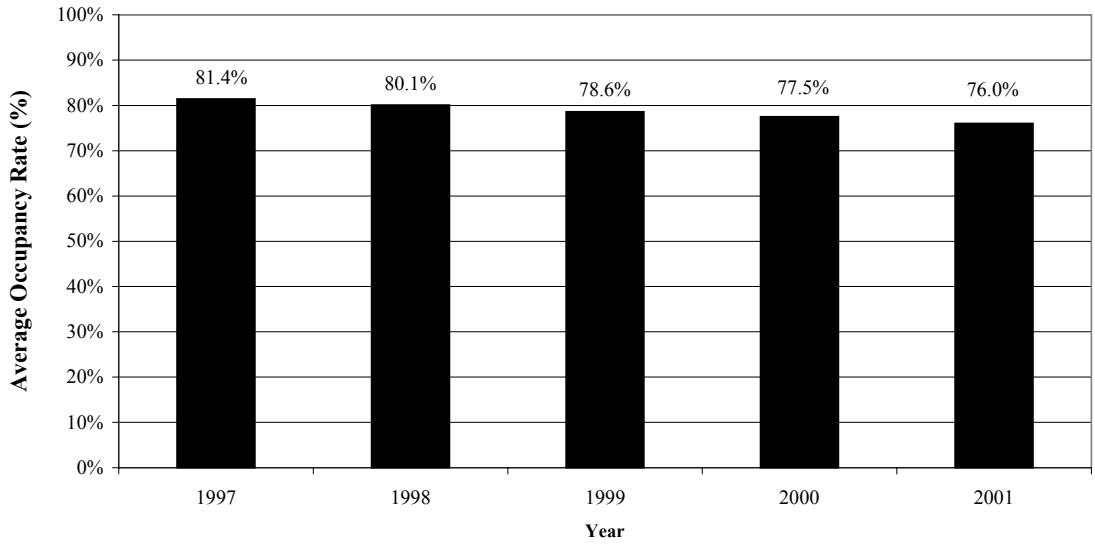
Occupancy rate is commonly used as an indicator for the level of utilization, performance, and profitability of nursing homes, assisted living, and other long-term care facilities. Nonetheless, there are limitations to using occupancy as an indicator. Occupancy rate in this section is calculated as a percentage by dividing the number of residents by the number of Medicare/Medicaid certified beds for a nursing home and licensed beds for an assisted living facility.

Since 1989, the Utah Bureau of Program Certification and Resident Assessment has contacted each Medicare/Medicaid certified nursing home facility on the first day of each month to obtain the facility's self-reported number of residents (known as the monthly census). The Utah Bureau of Licensing began to collect monthly census data from assisted living facilities in March 2001. The facility-reported census data are manually input into electronic databases at each of the two bureaus. We evaluated accuracy and quality of the data and found the occupancy data for nursing homes since 1997 are more reliable than data collected before 1997.

Nursing Facility Occupancy Rates: 1997-2001

As shown in Figure 2 (page 11), Utah's nursing home industry has a low occupancy rate in comparison with other intermountain states for 1998. Figure 15 illustrates a slight decline in Utah nursing home occupancy rates since 1997.

Figure 15. Occupancy Rates for Medicare/Medicaid Certified Nursing Homes: Utah, 1997-2001*



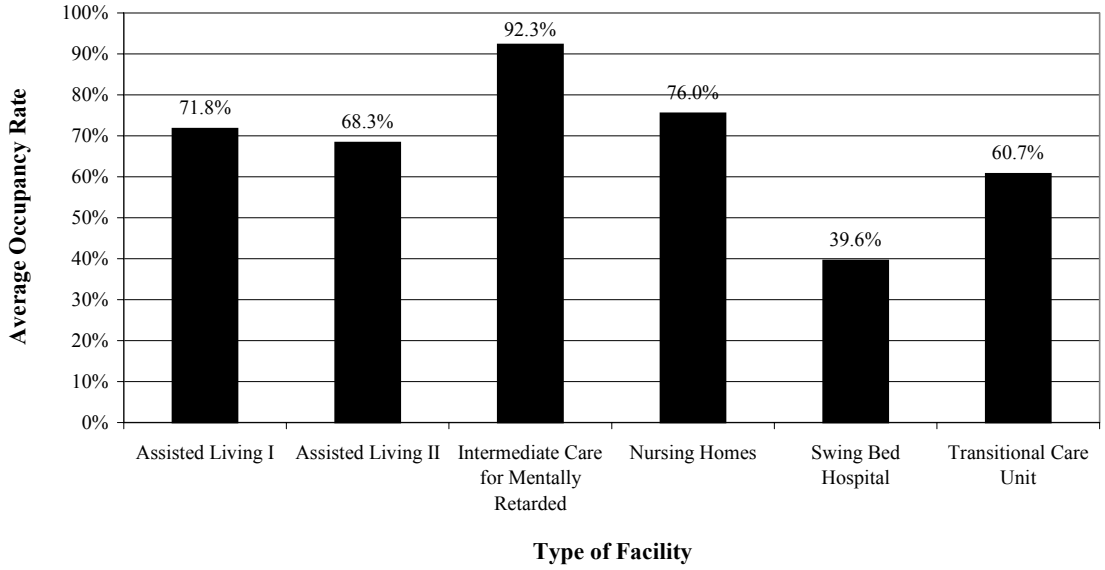
*Note: January-May 2001.
Source: Nursing Home Census Database, Utah Bureau of Program Certification and Resident Assessment.

This phenomena also occurred in other states. There are different interpretations of the decline in Medicaid nursing home utilization rates in these states. Some think that it is a sign of success to keep Medicaid patients in community-based services. However, others caution against reading too much into these declines because of the potentially confounding effects of the nursing home moratorium, and tightened eligibility standards for Medicaid nursing home coverage.[17]

Occupancy Rates for Six Types of Long-term Care Facilities: 2001

Does the expansion of assisted living (AL) facilities affect nursing home occupancy rates in Utah? Figure 16 reports the average occupancy rates for six types of long-term care facilities from January to May 2001 in Utah.

Figure 16. Occupancy Rates by Type of Facility: Utah, January-May 2001



Source: Utah Bureau of Program Certification and Resident Assessment and Licensing.

- Intermediate Care Facilities for the Mentally Retarded (ICF/MR) have the highest occupancy rate (92.3%), followed by the Medicare/Medicaid certified skilled nursing facilities and nursing facilities (76.0%).
- Transitional Care Units (TCUs) in urban hospitals and swing bed hospitals (SBH) in rural areas have lower occupancy rates, 60.7 and 39.6 percent respectively. Urban TCUs have a different patient mix than rural SBHs. Impacted by the Medicare reimbursement policy, the majority of patients in TCUs are Medicare patients. Most rural SBH patients are Medicaid patients. Also, many rural hospitals license all their beds as both acute care and swing beds, but only designate a part of the licensed swing beds as long-term care beds. Since all licensed swing beds are used as the denominator for calculating occupancy rates, the rural hospitals usually have a lower occupancy rate than other nursing facilities. Because TCUs and SBHs have different utilization patterns than non-hospital-based nursing homes, we have excluded TCUs and SBHs from further analysis of occupancy rates for nursing homes in this report.

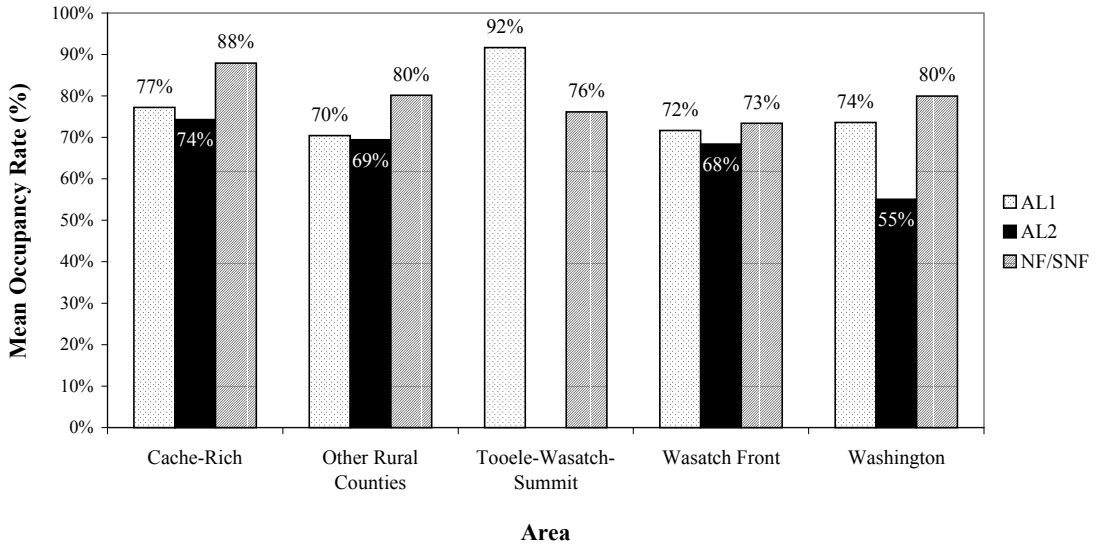
- The occupancy rate was 71.8 percent for AL I facilities and 68.3 percent for AL II facilities. From March to July 2001, occupancy rates for AL I facilities were stable, but for AL II facilities they increased slightly.

AL facilities do not receive reimbursements from the Medicaid Program, except for the UDOH demonstration project (Flex Care Program). Since AL II facilities may host some private-pay patients who might need nursing care, we hypothesized that a higher AL II facility occupancy rate in a county may be associated with a lower nursing home occupancy rate for that county. A test of the statistical correlation between county-level occupancy rates for nursing facilities and AL II facilities was performed. Due to the small number of counties that have AL II facilities (n=10), we did not find any statistically significant relationship for county-level occupancy rates between nursing and AL II facilities. Therefore, we tentatively conclude that the occupancy rates for AL II and nursing facilities are independent from each other under current policies in 2001.

Geographic Variation of Occupancy Rates

There are noticeable geographic variations in nursing homes' and AL facilities' occupancy rates in Utah. We grouped the 29 counties into five long-term care service areas according to availability of nursing facilities, geographic adjacency, and patient migration pattern. Figure 17 reports the area occupancy rates of nursing home and AL facilities from March to May 2001.

Figure 17. Occupancy Rates of Nursing Homes and Assisted Living Facilities by Area: Utah, March-May 2001



Source: Utah Bureau of Provider Certification and Resident Assessment, Nursing Home Census Database.

- The Wasatch Front area has a lower occupancy rate for nursing homes than other areas. However, its AL I facilities have a higher occupancy rate on average than other areas, except for Tooele and Wasatch counties. Furthermore, the utilization pattern

difference between nursing homes and assisted living facilities is smaller in the Wasatch Front area than in other areas.

- In the Tooele, Summit, and Wasatch County area, there is no AL II facility. The AL I occupancy rate in these counties was the highest of all areas in 2001.

- The area of Box Elder, Cache, and Rich counties had the highest occupancy rates for nursing homes and AL II facilities of all the five areas.

- Washington and other rural counties also had higher nursing home occupancy rates than the Wasatch Front area.

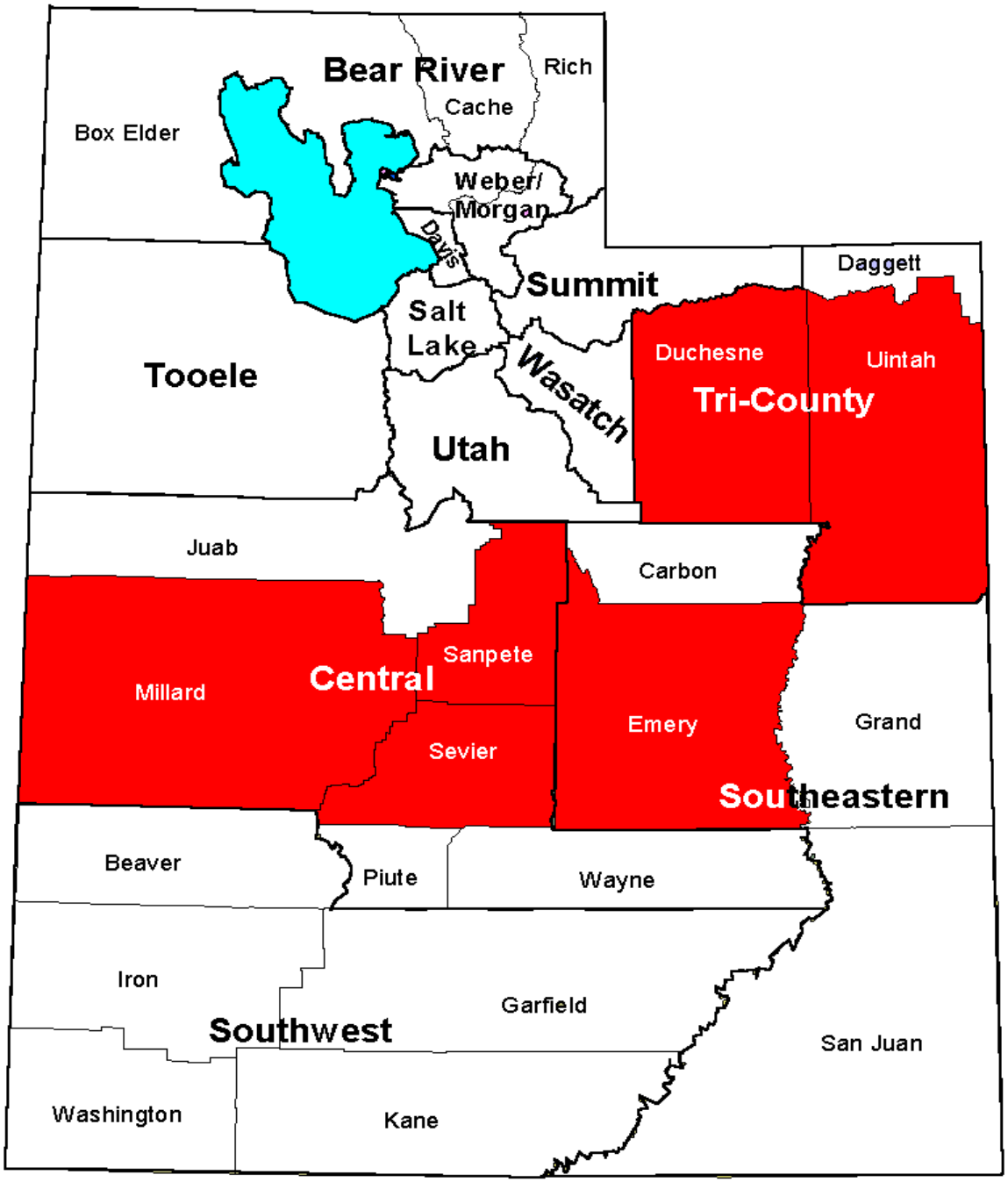
Nursing Homes with Chronic High Occupancy Rates

McFall, in 1996, proposed the use of chronic high occupancy rates as "a possible indicator that demand may exceed the number of available beds at any given time".[13] We have identified six rural counties that experienced 90 percent or higher nursing home occupancy rates from January to May 2001. There are seven swing bed hospitals in the same area (see Figure 18). However, only two of them have occupancy rates for swing beds higher than 50 percent. Meanwhile, five out of the seven rural hospitals have 30 percent or less acute care occupancy rates.

One national study revealed that limited nursing home bed supply in certain areas was an important determinant of hospital discharge delays, which could add to the overall costs of hospital care.[11] According to snapshot data collection done by the Utah Bureau of Program Certification and Resident Assessment in September 2001, there were approximately 65 patients on "waiting lists" for nursing facilities in those counties. However, the number of people on a waiting list may not be an accurate indicator of the immediate need for more nursing home beds in an area, because some candidates put their names on the waiting list long before they need to go to a nursing care facility.

Some actions have been taken to address the issue of chronically high occupancy rates in rural areas of Utah. Nursing facilities in three out of the six rural counties filed construction plans with the Bureau of Licensing in 2001. Some rural hospitals hired dually-certified administrators for hospital and nursing home to enhance utilization and performance of hospital swing beds in rural Utah. Also, two rural hospitals obtained the status of Critical Access Hospitals. However, neither hospital will change the number of swing beds currently being utilized in their county area.

Figure 18. Counties with Chronic High Occupancy Rates for Nursing Homes: Utah, 2001



Note: Shaded counties experienced chronic high occupancy rates for nursing homes.

Multiple Factors May Affect the Nursing Home Occupancy Rate

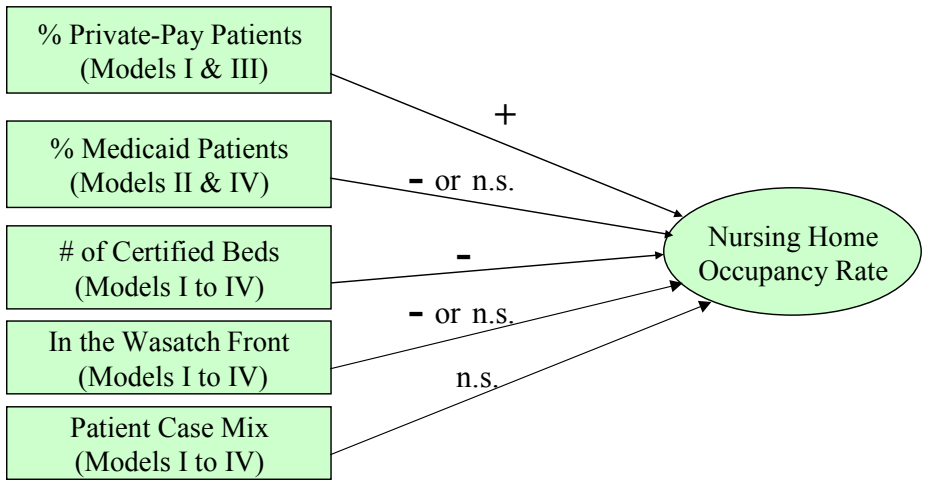
We have presented the geographic variation in nursing home occupancy rates in Utah. Are there other factors affecting variation in occupancy rates? We identified five facility characteristics that might predict the occupancy rate variations among nursing homes. These factors are percent of private-pay patients, percent of Medicaid patients, location in the Wasatch Front area, total number of certified beds, and patient case-mix index calculated in July 2001. We performed linear regression analyses on the effects of these five predictors on occupancy rate. Figure 19 and Table 5 summarize the statistical findings from four regression models.

- Percent of private-pay patients in a nursing facility has a significantly positive effect on occupancy rate. Every percentage point increase in the percent of private-pay patients in a nursing home will result in a .59 percent increase in a facility's overall occupancy rate. In other words, the more private-pay patients a nursing home has, the higher its occupancy rate.

- The impact of the percent of Medicaid patients in a nursing facility is not consistent across Models II and IV. The analysis based on the 2001 data indicates that the higher percent of Medicaid patients, the lower nursing home occupancy rate. However, this negative relationship is not statistically significant in the analysis based on the 1997-2001 data.

- The total number of certified beds in a nursing facility has a consistent and negative effect on the occupancy rates in all four models. The more certified beds a nursing home has, the lower its occupancy rate. However, the impact of number of beds on occupancy rate is smaller than that of Model I.

Figure 19. Effect of Payment Sources, Facility Size, Geographic Location, and Patient Case Mix on Nursing Home Occupancy Rate



+ = Positive relationship; - = Negative relationship; n.s. = No significant relationship.

Table 5. Means and Unstandardized Coefficients From Four Regression Models

Model:		Model I	Model II	Mean	Model III	Model IV
Year of data:	2001	2001	2001	1997-2001	2001	1997-2001
Statistics:	Mean	b sig.	b sig.	Mean	b sig.	b sig.
Dependent Variable:						
Average Occupancy Rate	75.7%			78.8%		
Independent Variable:						
% Private-pay Patient	20.8%	.588***	N/A	23.2%	.366***	N/A
% Medicaid Patient	68.5%	N/A	-.444**	65.5%	N/A	-.002
Total Number of Certified Beds	92.8	-.163***	-.197***	88.8	-.111***	-.00000008 ***
Location in the Wasatch Front	69.3%	-4.603	-5.028	71%	-6.845***	-6.958***
Case-mix Index	85.68	-.140	-.237	N/A	N/A	N/A
No. of Cases	75	75	75	411	411	411
R Square & Model Significance		.316***	.295***		.196***	.117***

* p < .05, ** p < .01, *** p. < .001. N/A = Not applicable.

Note: Because % Private-pay Patient is correlated to % Medicaid Patients in a nursing home, two separate regression models are tested for each variable. Case-mix Index is only available for the 2001 data with 75 cases. We also tested the 1997-2001 data to assure reliability of the 2001 models.

- Nursing facilities located in the Wasatch Front area are more likely to have a lower occupancy rate (by 6.8%) than their counterparts in other areas. However, this relationship is not significant in Models I and II which have a smaller sample size (n=75) than Models III and IV (n=411).

- Patient Case-mix Index shows no significant relationship with the occupancy rate. The Case-mix Index is calculated from the nursing home patient Minimum Data Set (MDS) and adjusted by patient age, sex, and health conditions. This index, to some degree, reflects the acuity level of a nursing facility. The Utah Division of Health Care Financing (HCF) developed the method for calculation of Case-mix Index in July 2001. The values for Case-mix Indices used in this analysis are the first set of indices calculated by HCF. Their calculation method has been modified and revised since then. Therefore, the preliminary finding (no effect of the patient Case-mix on occupancy rate) from this analysis may not hold true for future studies.

Summary of Occupancy Rate Analysis

Two significant predictors for nursing home occupancy rates in Utah have been found. They are the percentage of nursing home patients who have a private payment source and the size of a nursing facility. These findings suggest that attracting more private-pay patients will significantly improve a facility's occupancy rate. However, overexpansion of the number of beds in a nursing home will lead to a significant decrease in the occupancy rate. The weakness of this analysis is that the denominator for occupancy rates is based on the number of certified beds. The number of available beds, based on a recent investigation, is smaller than the number of certified beds. Therefore, the occupancy rates presented in this section are underestimated.

V. QUALITY INDICATOR: NUMBER OF DEFICIENCIES

In the preceding pages, we have shown that the Medicaid moratorium had its intended effect on slowing the growth in nursing home beds in Utah, but that occupancy rates have declined steadily since 1997. The ultimate aim of the moratorium was to safeguard the quality of care in nursing homes by reducing bed growth, thereby allowing existing facilities to maintain occupancy at levels that would assure financial stability. The importance of monitoring quality in nursing homes is also increased by the need to contain costs in Medicare and Medicaid programs.[19] To understand the full effect of the moratorium, it was necessary to evaluate the quality of care in Utah nursing homes.

Using Certification Survey Deficiencies to Measure Quality

We conducted an analysis to determine the effect of facility size, urban location, ownership type, and occupancy rate on nursing home quality. Data from the monthly nursing home census survey and Medicare/Medicaid certification surveys were used. Data from the two sources were linked by facility name, yielding a dataset that described certification surveys conducted on Utah nursing homes between January 1997 and May 2001.

Defining Quality

Quality was defined operationally by the number and type of deficiencies identified by certification surveys. Each certification requirement has an “F-tag”, a letter and number combination that indicates the category and specific requirement. Certain categories of requirements are designated as substandard quality-of-care requirements. During a survey, surveyors score requirements by assigning a letter, “A” through “L”, which indicates the scope and severity of a violation of the requirement. For this analysis, we coded F-tags pertaining to substandard quality of care, and then converted severity scores that surveyors coded as letters to numeric ordinal scores. Four quality indicators (QIs) were created:

QI-1. the total number of deficiencies of any type on a survey,

QI-2. the severity of substandard quality of care deficiencies on a survey, calculated by multiplying substandard quality of care severity scores by 1.5, then summing severity scores for each survey,

QI-3. the number of deficiencies at the maximum severity level on a survey, calculated by determining the highest severity score on a survey, then multiplying that score by the number of deficiencies at that score, and

QI-4. the percent of deficiencies that represent substandard quality of care on a survey.

Some studies of nursing home quality have focused on outcome measures, such as resident assessment data collected in the Minimum Data Set (MDS). However, MDS data were not available during the moratorium evaluation. On the other hand, there is good support for using survey deficiencies as a proxy measure of quality. Shaughnessy et al.[20] used the number of Medicaid certification survey violations as a surrogate quality measure.

They considered this to be a structural measure of quality of care that reflects the general care environment. Mean number of violations for 157 nursing homes in Colorado was 5.71 in 1978 and 6.11 in 1979 (out of 36 certification requirements). Hospital-based nursing homes had fewer violations than freestanding nursing homes.

Mukamel used MDS data to construct a set of risk-adjusted outcome measures to assess the quality of care in nursing homes.[21] The number of deficiencies on annual facility surveys by the New York Department of Health was used as an independent measure of quality. Deficiency score was calculated as the average number of deficiencies on annual surveys for each facility from 1986 to 1990. Mukamel found significant positive correlation with the use of physical restraint, deterioration in decubitus ulcers, decline in Activities of Daily Living scores, dehydration, and accident rate.

Descriptions of Quality Indicators

During the period from January 1997 through May 2001, the Bureau of Program Certification and Resident Assessment conducted 319 certification surveys. Tables 6 and 7 provide a description of the surveys and the four quality indicators.

Table 6. Medicaid/Medicare Certification Surveys and Deficiencies: Utah, January 1997–May 2001

	1997	1998	1999	2000	2001*	Total	Average
Number of Surveys	66	77	62	79	35	319	63.8
Number of Deficiencies	265	344	279	317	181	1,386	277.2
Average Deficiencies per Survey	4.02	4.47	4.50	4.01	5.17	-	4.43

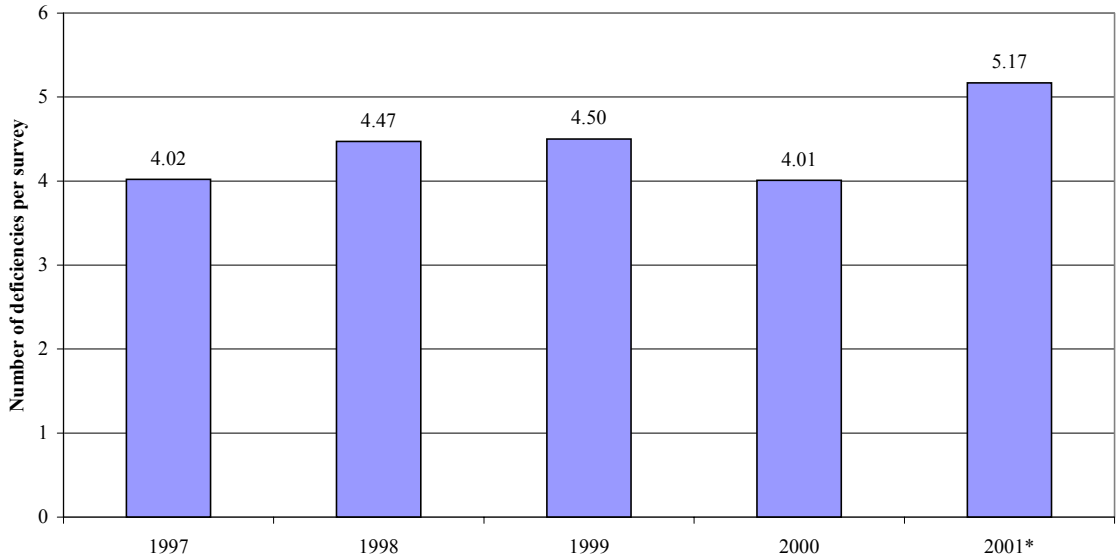
*Includes January through May only.

Table 7. Descriptive Statistics of Quality Indicators

Quality Indicator	N	Minimum	Maximum	Mean	Std. Deviation
1. Number of Deficiencies	319	0.00	28.00	4.34	4.06
2. Severity of Substandard of Quality of Care	319	0.00	87.80	11.77	11.83
3. Maximum Severity	319	0.00	43.00	4.44	4.07
4. Percent of Deficiencies, Substandard of Quality of Care	319	0.00	100.00	41.67	33.91

Deficiencies per survey maintained an unsteady rate during the period, reaching a peak of 5.17 deficiencies per survey in 2001.

Figure 20. Average Number of Deficiencies per Medicaid/Medicare Certification Survey Per Year: Utah, January 1997 - May 2001



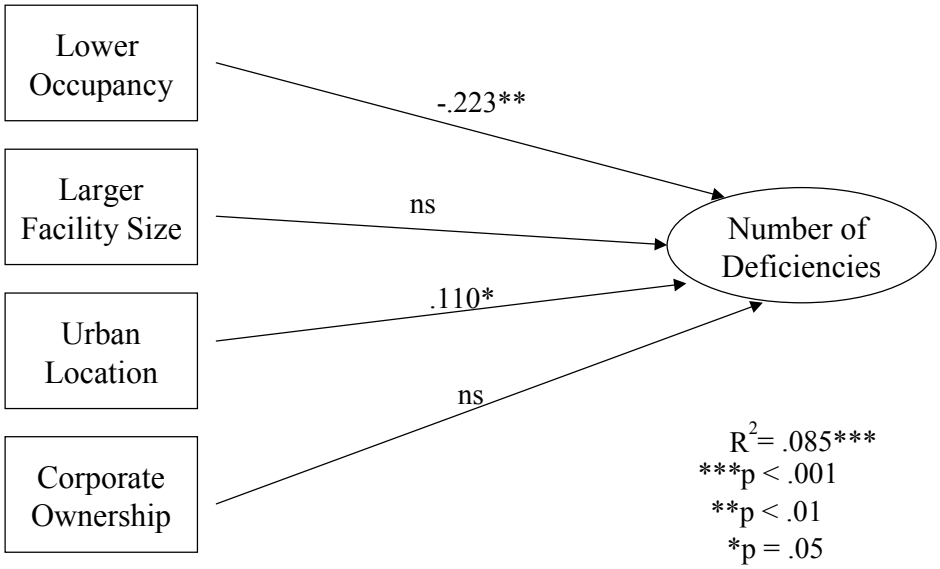
*Includes January through May only
Source: Utah Bureau of Program Certification and Resident Assessment

Multiple Factors May Affect Quality of Care

We hypothesized that each quality indicator would be negatively affected by lower occupancy rate, urban rather than rural location, ownership of multiple facilities rather than a single facility, and a greater number of beds in the facility. Inadequate staffing was also hypothesized to have a negative effect on quality, but staffing data were not available. Four regression analyses were conducted, one for each quality indicator, with each analysis using the same predictor variables.

In two of the four regression analyses, occupancy rate was the only predictor variable found to have a significant effect on the quality indicators. Occupancy rate explained 7.7% ($p < .001$) of the variance in QI-2 (Severity of Substandard Quality of Care), and 4.4% ($p < .01$) of the variance in QI-3 (Maximum Severity). The model for QI-4 (Percent of Deficiencies, Substandard Quality of Care) produced no significant results. The best model, in terms of explaining variance, was the QI-1 (Number of Deficiencies) model. Results of that model are shown in Figure 21.

Figure 21. Effect of Occupancy Rate, Number of Beds, Urban Location, and Type of Ownership on Number of Nursing Home Survey Deficiencies



Summary of Analysis of Quality Indicators

Utah's Medicaid Moratorium had the intended effect of reducing nursing home bed growth, but its goal to increase occupancy rates was not so clearly achieved. The impact of the moratorium on nursing home quality was not evaluated before this study. Other state and federal cost containment measures could have undesirable effects on the quality of nursing homes in the state. Monitoring quality is important, but quality is an elusive concept that is not easily measured. In this study, Medicaid/Medicare certification survey deficiencies were used to create four surrogate measures of quality in nursing homes.

Three of the surrogate quality measures attempted to capture the scope and severity of deficiencies related to quality of care. The measure that proved to be most powerful, however, was a simple count of deficiencies of any type on a given survey. The total number of deficiencies on a survey is a value that can be easily collected and tracked by survey staff. In contrast to the other quality measures tested in this study, total deficiencies requires no determination of deficiency type, weighting, or calculation other than a simple count. It is does not require access to federal data files, and it is immediately available at the time of each survey. For these reasons, we recommend that a monitoring procedure be developed to track total survey deficiencies, to establish state and district-level baselines, and to alert certification and regulatory staff when acceptable limits are exceeded.

VI. PROJECTED NEEDS OF NURSING HOME BEDS IN UTAH

The current low occupancy rate in Utah indicates that there are available beds in nursing facilities for Utahns who need long-term care. What are Utah's future long-term care needs? What is a balanced nursing home bed supply for Utahns? To accurately project the future needs of long-term care is a complex task, which goes beyond the scope of this review. We have conducted a simple state-level projection on the need for nursing home beds in 2005 and 2010, to provide a reference point for policy makers, market planners, and potential investor.

Assumptions and Projections

Table 8. Projected Nursing Home Bed Needs for 2005 and 2010 in Utah*

Year	1989 Estimates	2000 Actual	2005 Projection	2010 Projection
Utah Population Aged 65+	147,068	190,222	205,659	236,675
Actual Number of Medicare/Medicaid Certified Nursing Home Beds	7,138	**7,594**		
Total Number of Nursing Home Patients		5,590	6,046	6,958
Number of Nursing Home Beds Per 10,000 65+	485	399		
Number of Nursing Home Patients Per 10,000 65+		294	294	294
Number of Nursing Home Beds Per 10,000 65+ at 90% Occupancy Rate		327	327	327
Ideal Number of Beds Needed at 90% Occupancy Rate		6,211	**6,718**	7,731
Ideal Number of Beds Needed at 85% Occupancy Rate		6,576	**7,113**	8,186
Ideal Number of Beds Needed at 80% Occupancy Rate		6,988	**7,558**	8,698

Sources: The population census information is from the U.S. Census Bureau. The population estimates and projections are from the Utah Governor's Office of Planning and Budget. The number of nursing home beds and patients are from the Utah Bureau of Program Certification and Resident Assessment.

*See Appendix C for detailed calculation method.

The following assumptions and projections are presented in Table 8.

1. The growth in population aged 65 and over in Utah will be 8.1% between 2000 and 2005, and 24.4% between 2000 and 2010.

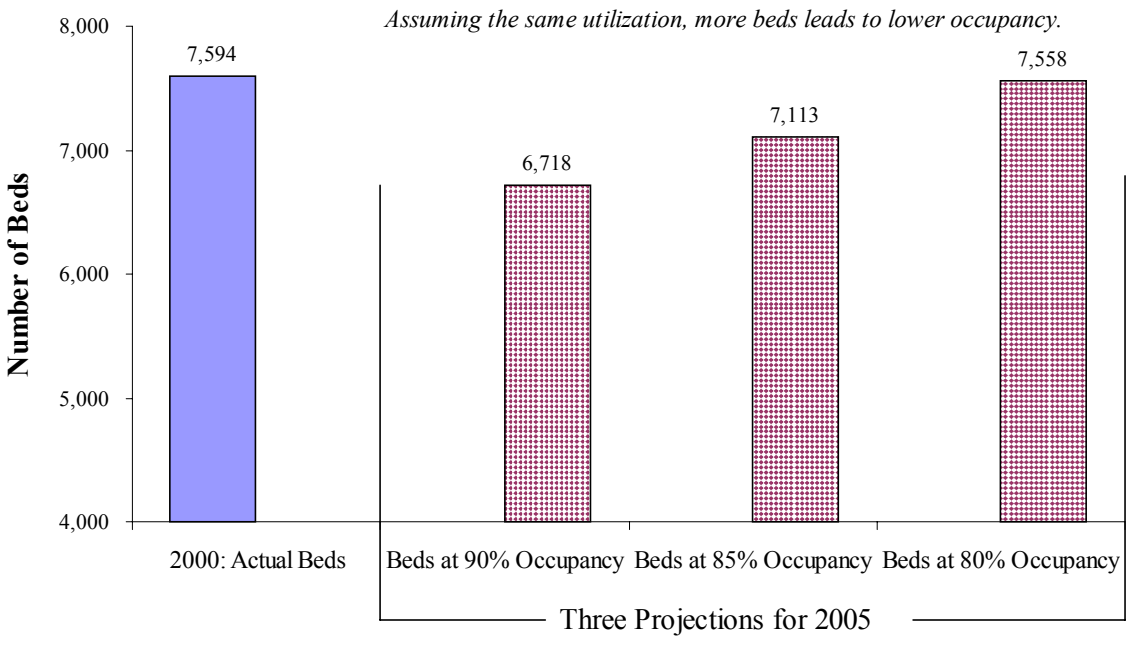
2. The number of Utah nursing home patients per 10,000 people, age 65 and over was 294 in 2000. We assume that the nursing home patient rate will be constant for 2005 and 2010, that is, 294 nursing home patients per 10,000 people, age 65 and over.

3. Based on the assumptions in points 1 and 2, we project that there will be approximately 6,046 nursing home patients in 2005, and 6,958 in 2010.

4. Based on the nursing home patient rate in 2000, we assume that only 327 nursing home beds per 10,000 people, age 65 and over, will be needed if the ideal occupancy rate is 90 percent. We also propose keeping this ideal occupancy rate constant for 2005 and 2010 projections.

5. Based on the assumptions and projections in points 1 through 4, we calculated the projected nursing home bed needs for 2005 and 2010 at three occupancy levels, namely, 90, 85, and 80 percent. In other words, if the state average occupancy rate were to be 90 percent, Utah would need 6,718 nursing home beds in 2005 and 7,731 in 2010. If the state average occupancy rate were to be 85 percent, Utah would need 7,113 nursing home beds in 2005 and 8,186 in 2010. If the state average occupancy rate were to be 80 percent, Utah would need 7,558 nursing home beds in 2005 and 8,698 in 2010.

Figure 22. Projected Needs of Nursing Home Beds: Utah, 2005



Source: Table 8.

Summary of the Projected Needs

The current number of nursing home beds should be adequate to meet the needs of nursing home patients in 2005. This projection is based on three assumptions: (1) the utilization pattern remains the same as that in 2000; (2) the projected statewide occupancy rate is 80% or higher; and (3) the growth rate of the population age 65 and over is 8% or lower between 2000 and 2005.

There are caveats to consider for readers who are interested in using this projection. First, the population projections were produced by the Utah Governor's Office of Planning and Budget (GOPB) before 2000 census data were available. In other words, this population projection has not been updated based on the 2000 census. Second, the U.S. Census Bureau also produced the projections for Utah's population in 2005 and 2010 before the release of the 2000 census. Their projected elderly population growth was much higher than the Utah GOPB projection. Third, the statewide projection does not replace the need for small geographic area projections. We have demonstrated the regional variation in the need for nursing home beds in this report. Adequate supply of nursing home beds at the state level does not equal adequate supply in all communities, especially rural communities in Utah. Fourth, many other factors could affect the future need for long-term care facilities, such as individual wealth, social network support, and transformation of long-term care services. None of these factors are included in this projection.

VII. CONCLUSION AND RECOMMENDATION

Conclusion

Over the past twelve years, the Utah long-term care market has become more complex and diverse. A variety of demographic and socioeconomic changes has created a demand for new approaches to providing long-term care services. In recent years, the performance of Utah nursing facilities (measured by occupancy rates and deficiencies) has been questioned. These changes and warning signs call for a departure from the "brick and mortar" moratorium strategy of guiding the long-term care industries.

The Utah Department of Health has taken the initiative of developing alternative solutions for cost-effective and patient-centered long-term care. However, these demonstration projects have not reached a "critical mass" to replace the moratorium's market control function at this time. Utah's long-term care market may not be ready to dramatically transform its construction-driven, market-share approach into a patient-driven approach. The Health Data Committee has concluded that slow and incremental changes with tailored policies for different communities and patient populations will lead to a healthy transition and benefit long-term care consumers and providers in Utah.

Recommendation

The committee proposes that the Utah Department of Health periodically publish the following LTC indicators developed in this report:

- Capacity Indicator: Number of Beds
- Performance Indicator: Occupancy Rate
- Quality Indicator: Number of Deficiencies
- Projected Needs Indicator: Ideal Number of Nursing Home Beds at 90% or Higher Occupancy Rate.

The committee promotes information-based decision making for the long-term care market among investors, providers, consumers and policy makers for developing and improving long-term care services in Utah. However, this review and the above indicators do not include patients' voices or customer preferences for future use of LTC. In order to provide comprehensive planning information to the LTC providers, developers, and policy makers, the committee recommends that the state conduct a population-based assessment of long-term care needs and consumers' preferences in Utah.

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APPENDIX A. POPULATION 65 YEARS AND OVER FOR THE U.S. AND SELECTED STATES: 1990-2000

Area	1990	1990	2000	2000	Change from 1990 to 2000	
	No.	%	No.	%	No.	%
United States	31,241,831	12.6	34,991,753	12.4	3,749,922	12.0
Arizona	478,774	13.1	667,839	13	189,065	39.5
California	3,135,552	10.5	3,595,658	10.6	460,106	14.7
Colorado	329,443	10	416,073	9.7	86,630	26.3
Idaho	121,265	12	145,916	11.3	24,651	20.3
Montana	106,497	13.3	120,949	13.4	14,452	13.6
Nevada	127,631	10.6	218,929	11	91,298	71.5
New Mexico	163,062	10.8	212,225	11.7	49,163	30.1
Utah	149,958	8.7	190,222	8.5	40,264	26.9

Source: Population 65 Years and Older for the United States, Regions, and States, and for Puerto Rico: 1990 and 2000 (October 2001). Washington, D.C.: U.S. Census Bureau. Retrieved March 11, 2002 from the World Wide Web: http://www.census.gov/prod/2/pop/p25/p25-1131.pdf

APPENDIX B. LICENSED NURSING AND ASSISTED LIVING FACILITIES: UTAH, 2002

District Name	Type	County	City	Provider Name	No. Licensed Beds as of April 1-2, 2002	No. Actual Available Beds as of March 11, 2002
Bear River Health District						
	ASSISTED LIVING - TYPE I					
		BOX ELDER	Brigham City	Peach Tree Place of Brigham I	12	
		BOX ELDER	Tremonton	Peach Tree Place of Tremonton	16	
		CACHE	Logan	Beehive Homes of Cache Valley	10	
		CACHE	Logan	Williamsburg Retirement Community, LLC	15	
	ASSISTED LIVING - TYPE II					
		BOX ELDER	Brigham City	Peach Tree Place of Brigham II	16	
		BOX ELDER	Brigham City	Peach Tree Place of Brigham III	28	
		CACHE	Logan	Terrace Grove	72	
		CACHE	Providence	Providence Assisted Living	40	
	NURSING CARE FACILITY					
		BOX ELDER	Brigham City	Pioneer Care Center	72	72
		BOX ELDER	Brigham City	Brigham City Nursing and Rehabilitation Center	84	82
		BOX ELDER	Tremonton	Bear River Valley Nursing Home	38	38
		CACHE	Logan	Sunshine Terrace	172	172
		CACHE	Logan	Logan Nursing and Rehabilitation	118	116
	SWING BED HOSPITAL					
		BOX ELDER	Brigham City	Brigham City Community Hospital	8	
		BOX ELDER	Tremonton	Bear River Valley Hospital	6	
	TRANSITIONAL CARE UNIT					
		CACHE	Logan	Logan Regional Hospital Transitional Care Unit	14	14
Central Utah Health District						
	ASSISTED LIVING - TYPE I					
		JUAB	Nephi	Canyon View Country Homes LC	13	
		MILLARD	Delta	Diamond D Inn	9	
		MILLARD	Delta	Pleasant Acres for Elderly	13	
		SANPETE	Ephraim	Golden Skyline Assisted Living	16	
		SANPETE	Fairview	Baker's Residential Care	9	
		SEVIER	Glenwood	Curtis Residential Home	16	
		SEVIER	Richfield	Beehive Homes of Richfield	12	
		SEVIER	Richfield	Beehive Home of Richfield #2	10	
		WAYNE	Loa	V and L Senior Care	5	
	NURSING CARE FACILITY					
		JUAB	Nephi	Heritage Hills Health Care Center	80	80
		MILLARD	Delta	West Millard Care Center	36	36
		SANPETE	Mayfield	Mayfield Community Care Center, Inc.	37	37
		SEVIER	Richfield	Richfield Care Center	98	98
	SWING BED HOSPITAL					
		JUAB	Nephi	Central Valley Medical Center	8	
		MILLARD	Delta	Delta Community Medical Center	10	
		MILLARD	Fillmore	Fillmore Community Medical Center	12	
		SANPETE	Gunnison	Gunnison Valley Hospital	12	
		SANPETE	Mount Pleasant	Sanpete Valley Hospital	20	
		SEVIER	Richfield	Sevier Valley Hospital	42	
Davis County Health District						
	ASSISTED LIVING - TYPE I					
		DAVIS	Bountiful	Heritage Place	70	
		DAVIS	Centerville	Meadow Brook Assisted Living Homes of Centerville #2	10	
		DAVIS	Centerville	Meadow Brook Assisted Living Homes of Centerville #1	10	
		DAVIS	Clearfield	Beehive Homes of Clearfield	10	
		DAVIS	Clinton	Country Pines Retirement Home	47	
		DAVIS	Farmington	Country Care	16	
		DAVIS	Kaysville	Apple Tree Assisted Living	80	
		DAVIS	Layton	Beehive Homes - Scott Inc.	13	

LICENSED NURSING AND ASSISTED LIVING FACILITIES: UTAH, 2002 *(Continued)*

District Name	Type	County	City	Provider Name	No. Licensed Beds as of April 1-2, 2002	No. Actual Available Beds as of March 11, 2002
Davis County Health District (continued)						
	ASSISTED LIVING - TYPE II					
		DAVIS	Bountiful	Bountiful House	81	
		DAVIS	Bountiful	Heritage Place Level II	43	
		DAVIS	Bountiful	The Inn at Barton Creek	80	
		DAVIS	Clearfield	Chancellor Gardens of Clearfield	95	
		DAVIS	Layton	Apple Village Assisted Living	90	
	INTERMEDIATE CARE FOR MENTALLY RETARDED					
		DAVIS	Bountiful	North Side Center	12	
	NURSING CARE FACILITY					
		DAVIS	Bountiful	Life Care Center of Bountiful	120	116
		DAVIS	Bountiful	Rocky Mountain Health Care - Bountiful	102	102
		DAVIS	Bountiful	South Davis Community Care Center	107	107
		DAVIS	Clearfield	Rocky Mountain Care - Clearfield	112	112
	TRANSITIONAL CARE UNIT					
		DAVIS	Bountiful	Lakeview Hospital TCU	10	
		DAVIS	Layton	Davis Hospital and Medical Ctr. Skilled Nursing Facility	10	
Salt Lake Valley Health District						
	ASSISTED LIVING - TYPE I					
		SALT LAKE	Draper	Draper Rehabilitation and Care Center Residential Care	13	
		SALT LAKE	Draper	Rick's Golden Care	5	
		SALT LAKE	Holladay	Holladay Home	9	
		SALT LAKE	Magna	Copper View Residential Home	13	
		SALT LAKE	Magna	Beehive Homes of Magna	10	
		SALT LAKE	Midvale	Heather Ridge Home of Midvale	12	
		SALT LAKE	Riverton	Tri-City Beehive Homes of Riverton	16	
		SALT LAKE	Salt Lake City	Niitsuma Living Center	4	
		SALT LAKE	Salt Lake City	Golden Living Center	110	
		SALT LAKE	Salt Lake City	Parklane Manor	54	
		SALT LAKE	Salt Lake City	Sarah Daft Home	22	
		SALT LAKE	Salt Lake City	Salt Lake Home	60	
		SALT LAKE	Salt Lake City	Highland Cove Retirement	68	
		SALT LAKE	Salt Lake City	Millcreek Retirement Residence	36	
		SALT LAKE	Salt Lake City	Evergreen Residential Care	8	
		SALT LAKE	Salt Lake City	Hennefer's Home for the Elderly	5	
		SALT LAKE	Salt Lake City	Janes Residential Care Center	15	
		SALT LAKE	Salt Lake City	The Light of Heaven	3	
		SALT LAKE	Salt Lake City	Green Gables, Inc.	58	
		SALT LAKE	Salt Lake City	Holladay Estate	5	
		SALT LAKE	Salt Lake City	Cottonwood Creek Retirement Community	50	
		SALT LAKE	Salt Lake City	Elderly Manor, Inc.	28	
		SALT LAKE	Salt Lake City	EISC - Rose Place	3	
		SALT LAKE	Sandy	Country Care Homes, L.C.	11	
		SALT LAKE	Sandy	Beehive Homes of West Sandy	10	
		SALT LAKE	Sandy	Beehive Gardens at Willow Creek	21	
		SALT LAKE	Sandy	Tri-City Beehive Homes of East Sandy	9	
		SALT LAKE	South Jordan	Tri-City Beehive Homes of South Jordan	9	
		SALT LAKE	South Jordan	HopeHaven	6	
		SALT LAKE	South Jordan	J and E Home Care	3	
		SALT LAKE	Taylorsville	Nancy's Oldies But Goodies	3	
		SALT LAKE	West Jordan	Beehive Homes of West Jordan, Inc.	11	
		SALT LAKE	West Jordan	Beehive Homes of West Jordan Inc. #2	12	
		SALT LAKE	West Valley City	Heather Ridge Home of West Valley	10	
	ASSISTED LIVING - TYPE II					
		SALT LAKE	Draper	The Stratford Special Care Community	35	
		SALT LAKE	Draper	The Wentworth Assisted Living Community at Draper	49	
		SALT LAKE	Midvale	Regent Assisted Living - Salt Lake	116	

LICENSED NURSING AND ASSISTED LIVING FACILITIES: UTAH, 2002 *(Continued)*

District Name	Type	County	City	Provider Name	No. Licensed Beds as of April 1-2, 2002	No. Actual Available Beds as of March 11, 2002
Salt Lake Valley Health District (continued)						
	ASSISTED LIVING - TYPE II *(continued)*					
		SALT LAKE	Salt Lake City	CHRISTUS St. Joseph Villa Assisted Living	48	
		SALT LAKE	Salt Lake City	Salt Lake Home Assisted Living	33	
		SALT LAKE	Salt Lake City	Brighton Gardens of Salt Lake City Assisted Living	127	
		SALT LAKE	Salt Lake City	The Wentworth	49	
		SALT LAKE	Salt Lake City	Cordia Senior Residence	140	
		SALT LAKE	Sandy	The Wentworth Assisted Living Community at Willow Creek	44	
		SALT LAKE	Sandy	Atria Assisted Living, Sandy	95	
		SALT LAKE	Sandy	Alta Ridge Assisted Living	42	
		SALT LAKE	South Jordan	Legacy House Assisted Living	87	
	INTERMEDIATE CARE FOR MENTALLY RETARDED					
		SALT LAKE	Salt Lake City	East Side Care Center	16	
		SALT LAKE	Salt Lake City	Bungalow Care Center	26	
		SALT LAKE	Sandy	Hillcrest Care Center	60	
		SALT LAKE	West Jordan	West Jordan Care Center	82	
		SALT LAKE	West Valley City	West Side Center - RHA Community Services of Utah	16	
	NURSING CARE FACILITY					
		SALT LAKE	Draper	Draper Rehabilitation and Care Center	93	83
		SALT LAKE	Murray	Murray Care Center	76	75
		SALT LAKE	Salt Lake City	Wasatch Valley Rehabilitation	118	112
		SALT LAKE	Salt Lake City	Utah State Veterans Nursing Home	81	81
		SALT LAKE	Salt Lake City	Fay Case Care Center	68	60
		SALT LAKE	Salt Lake City	Pine Ridge Care Center	41	41
		SALT LAKE	Salt Lake City	Friendship Villa Care Center	37	37
		SALT LAKE	Salt Lake City	Holladay Healthcare Center	120	111
		SALT LAKE	Salt Lake City	Evergreen Canyons Health and Rehabilitation Center	100	79
		SALT LAKE	Salt Lake City	Willow Wood Care Center	79	79
		SALT LAKE	Salt Lake City	Garden Terrace Alzheimer's Center of Excellence	120	120
		SALT LAKE	Salt Lake City	CHRISTUS St. Joseph Villa	221	185
		SALT LAKE	Salt Lake City	Heritage Eastridge Rehabilitation Center	113	99
		SALT LAKE	Salt Lake City	Infinia at Alta	99	82
		SALT LAKE	Salt Lake City	Woodland Park Care Center	134	134
		SALT LAKE	Salt Lake City	Infinia at Granite Hills	72	58
		SALT LAKE	Salt Lake City	Highland Cove Health Care Center	34	
		SALT LAKE	Salt Lake City	Heritage Bennion Care Center	104	103
		SALT LAKE	Salt Lake City	Hillside Rehabilitation Center	121	83
		SALT LAKE	Salt Lake City	Midtown Manor Care Center	82	82
		SALT LAKE	Salt Lake City	Fairview Care Center/West	36	36
		SALT LAKE	Salt Lake City	Brighton Gardens of Salt Lake City Nursing Care Facility	45	45
		SALT LAKE	Salt Lake City	Arlington Hills Care Center LLC	108	
		SALT LAKE	Salt Lake City	Fairview Care Center/East	36	36
		SALT LAKE	Salt Lake City	Federal Heights Rehabilitation and Nursing Center	154	122
		SALT LAKE	Salt Lake City	Millcreek Health Center	61	61
		SALT LAKE	Salt Lake City	Highland Care Center	108	104
		SALT LAKE	Salt Lake City	Holladay Medical LLC, dba Infinia Health and Rehabilitation	162	120
		SALT LAKE	Sandy	Sandy Regional Health Center	154	154
		SALT LAKE	Sandy	Crosslands Rehabilitation and Healthcare Center	120	120
		SALT LAKE	West Jordan	South Valley Health Center	120	120
		SALT LAKE	West Valley City	Rocky Mountain Care - West Valley	72	72
		SALT LAKE	West Valley City	Hazen Nursing Home	26	26
	TRANSITIONAL CARE UNIT					
		SALT LAKE	Salt Lake City	Columbia St. Mark's Hospital Transitional Care	23	23
		SALT LAKE	Salt Lake City	LDS Hospital Transitional Care Center	32	32
Southeastern Utah Health District						
	ASSISTED LIVING - TYPE I					
		CARBON	Helper	Harmony House Residential Center, Inc.	16	
		EMERY	Elmo	Turnquist Retreat	16	

LICENSED NURSING AND ASSISTED LIVING FACILITIES: UTAH, 2002 *(Continued)*

District Name	Type	County	City	Provider Name	No. Licensed Beds as of April 1-2, 2002	No. Actual Available Beds as of March 11, 2002
Southeastern Utah Health District (continued)						
	ASSISTED LIVING - TYPE II					
		CARBON	Price	Heirloom Inn	27	
	NURSING CARE FACILITY					
		CARBON	Price	Parkdale Care Center	58	58
		CARBON	Price	Castle Country Care Center	100	76
		EMERY	Ferron	Emery County Care and Rehabilitation	55	55
		SAN JUAN	Blanding	Four Corners Regional Care Center	104	104
	SWING BED HOSPITAL					
		GRAND	Moab	Allen Memorial Hospital	16	
	TRANSITIONAL CARE UNIT					
		CARBON	Price	Castleview Hospital Transitional Care Center	8	8
Southwest Utah Health District						
	ASSISTED LIVING - TYPE I					
		BEAVER	Beaver	Beehive Homes of Beaver	10	
		IRON	Cedar City	Beehive Homes of Cedar City #2	11	
		IRON	Cedar City	Beehive Homes of Cedar City	11	
		KANE	Kanab	Beehive Homes of Kanab	13	
		WASHINGTON	Hurricane	Our Home For The Elderly I	9	
		WASHINGTON	Hurricane	Beehive Homes of Hurricane	14	
		WASHINGTON	Laverkin	Ridge View House	5	
		WASHINGTON	St. George	Rosecrest Manor	9	
		WASHINGTON	St. George	Beehive Homes of Washington County	12	
		WASHINGTON	St. George	Little Grandma's House	10	
		WASHINGTON	St. George	The Willows	8	
		WASHINGTON	St. George	The Meadows Retirement Community	61	
		WASHINGTON	Toquerville	River View House	4	
		WASHINGTON	Toquerville	Mesa View House	5	
		WASHINGTON	Washington	Comfort Cottage	6	
	ASSISTED LIVING - TYPE II					
		IRON	Cedar City	Emerald Point	65	
		WASHINGTON	Hurricane	Our Home For The Elderly II	3	
		WASHINGTON	St. George	PeachTree Place of St. George	76	
		WASHINGTON	St. George	Atria Assisted Living St. George	50	
		WASHINGTON	St. George	Beehive Homes of Washington County #2	15	
		WASHINGTON	St. George	Sterling Court	30	
		WASHINGTON	St. George	Durham Care Assisted Living	5	
	NURSING CARE FACILITY					
		IRON	Cedar City	Kolob Regional Care and Rehabilitation	120	120
		IRON	Parowan	Iron County Nursing Home	31	31
		WASHINGTON	Hurricane	Hurricane Rehabilitation Center	60	60
		WASHINGTON	St. George	St. George Care and Rehabilitation	159	140
		WASHINGTON	St. George	Porter's Nursing Home	53	53
		WASHINGTON	St. George	Red Cliffs Regional	124	124
	SMALL HEALTH CARE FACILITY					
		WASHINGTON	LaVerkin	Mountain View House	3	
		WASHINGTON	St. George	Among Friends	3	
		WASHINGTON	St. George	Rosebriar Manor	3	
		WASHINGTON	St. George	Durham Care Type 'N'	3	
		WASHINGTON	St. George	The Residence	3	
		WASHINGTON	Washington	Comfort Cottage - Type 'N'	3	
	SWING BED HOSPITAL					
		BEAVER	Beaver	Beaver Valley Hospital	57	
		BEAVER	Milford	Milford Valley Memorial Hospital	34	
		GARFIELD	Panguitch	Garfield Memorial Hospital	44	
		KANE	Kanab	Kane County Hospital	38	

LICENSED NURSING AND ASSISTED LIVING FACILITIES: UTAH, 2002 *(Continued)*

District Name	Type	County	City	Provider Name	No. Licensed Beds as of April 1-2, 2002	No. Actual Available Beds as of March 11, 2002
Summitt County Health District						
	ASSISTED LIVING - TYPE I					
		SUMMIT	Kamas	Summit County Assisted Living	5	
Tooele County Health District						
	ASSISTED LIVING - TYPE I					
		TOOELE	Tooele	Beehive Homes of Tooele	12	
	NURSING CARE FACILITY					
		TOOELE	Tooele	Rocky Mountain Care- Tooele	84	77
	SWING BED HOSPITAL					
		TOOELE	Tooele	Tooele Valley Medical Center	38	
TriCounty Health District						
	ASSISTED LIVING - TYPE I					
		DUCHESNE	Roosevelt	Parkside Manor	12	
		UINTAH	Roosevelt	Parkside Manor	12	
		UINTAH	Vernal	Beehive Homes of Vernal, Inc.	9	
	NURSING CARE FACILITY					
		DUCHESNE	Roosevelt	Stewart's Care and Rehabilitation Center, Inc.	59	59
		UINTAH	Roosevelt	Stewart's Care and Rehabilitation Center, Inc.	59	59
		UINTAH	Vernal	Uintah Care Center	52	52
	SWING BED HOSPITAL					
		DUCHESNE	Roosevelt	Uintah Basin Medical Center	5	
		UINTAH	Roosevelt	Uintah Basin Medical Center	5	
		UINTAH	Vernal	Ashley Valley Medical Center	39	
Utah County Health District						
	ASSISTED LIVING - TYPE I					
		UTAH	American Fork	Heritage Haven	15	
		UTAH	American Fork	Beehive Home of American Fork #2	10	
		UTAH	American Fork	Beehive Home of American Fork	8	
		UTAH	Lehi	Greenwood Manor	37	
		UTAH	Mapleton	East Meadow Care Center	8	
		UTAH	Orem	Stonewood Manor II	16	
		UTAH	Orem	Stonewood Manor	14	
		UTAH	Orem	Beehive Homes of Orem IV	16	
		UTAH	Orem	Golden Living Orem - South	26	
		UTAH	Orem	Beehive Homes of Orem III	11	
		UTAH	Orem	Bel Aire Homes	16	
		UTAH	Orem	Beehive Homes of Orem II	11	
		UTAH	Orem	Beehive Homes of Orem	8	
		UTAH	Payson	Beehive Homes of Payson	10	
		UTAH	Pleasant Grove	Lakeview Elderly Care	8	
		UTAH	Pleasant Grove	Beehive Homes of Pleasant Grove #2	9	
		UTAH	Pleasant Grove	Beehive Homes of Pleasant Grove	8	
		UTAH	Provo	Evergreen Living	5	
		UTAH	Provo	Cove Point Retirement	49	
		UTAH	Salem	Beehive Home of Salem	10	
		UTAH	Spanish Fork	Beehive Homes of Spanish Fork	10	
		UTAH	Spanish Fork	Hales Residential Care	12	
		UTAH	Springville	Canterbury Place	8	
		UTAH	Springville	Reid's Park Place	16	
	ASSISTED LIVING - TYPE II					
		UTAH	American Fork	Mira Vista Assisted Living Facility	32	
		UTAH	Lehi	Greenwood Assisted Living	16	
		UTAH	Orem	Summerfield Retirement Living, Inc.	44	
		UTAH	Orem	Orem Friendship Manor	24	
		UTAH	Orem	Golden Living Orem - North	35	
		UTAH	Payson	Robbins' Care Center, An Assisted Living Residence	14	
		UTAH	Payson	Mountain Air Assisted Living	14	

LICENSED NURSING AND ASSISTED LIVING FACILITIES: UTAH, 2002 *(Continued)*

District Name	Type	County	City	Provider Name	No. Licensed Beds as of April 1-2, 2002	No. Actual Available Beds as of March 11, 2002
Utah County Health District (continued)						
	ASSISTED LIVING - TYPE II *(continued)*					
		UTAH	Provo	Courtyard at Jamestown	145	
		UTAH	Santaquin	Latter Days Assisted Living	15	
		UTAH	Spanish Fork	Hearthstone Manor	32	
	INTERMEDIATE CARE FOR MENTALLY RETARDED					
		UTAH	American Fork	Utah State Developmental Center	290	
		UTAH	Lindon	Lindon Care and Training Center	66	
		UTAH	Orem	Mesa Vista	54	
		UTAH	Orem	Hidden Hollow Care Center	35	
		UTAH	Orem	Topham's Tiny Tots Care Center	50	
		UTAH	Provo	Provo Care Center	34	
		UTAH	Provo	Medallion Manor	40	
	NURSING CARE FACILITY					
		UTAH	American Fork	Heritage Care Center	106	106
		UTAH	Lehi	Timp Haven Care Center	30	30
		UTAH	Orem	Orchard Park Care Center	89	80
		UTAH	Orem	Orem Nursing and Rehabilitation Center, Inc.	120	100
		UTAH	Payson	Payson Nursing and Rehabilitiation Center	40	35
		UTAH	Pleasant Grove	Alpine Valley Care Center	52	45
		UTAH	Provo	Country View Manor	50	50
		UTAH	Provo	East Lake Care Center	223	125
		UTAH	Provo	Oakview Living Center, L.L.C.	70	70
		UTAH	Provo	Crestview Care Center	99	84
		UTAH	Spanish Fork	Hales Rest Home	29	29
		UTAH	Springville	Art City Nursing and Rehabilitation Center	55	51
		UTAH	Springville	Hobble Creek Care Center	44	27
	OTHER					
		UTAH	Orem	Center for Change	16	
	SMALL HEALTH CARE FACILITY					
		UTAH	Orem	Heatherridge Inn	3	
	TRANSITIONAL CARE UNIT					
		UTAH	American Fork	American Fork Hospital-Transitional Care	12	12
		UTAH	Payson	Mountain View Hosp. Continuing Care Center	14	14
		UTAH	Provo	Transitional Care Unit at UVRMC	16	16
Wasatch County Health District						
	NURSING CARE FACILITY					
		WASATCH	Heber City	Rocky Mountain Care - Heber	49	45
	SWING BED HOSPITAL					
		WASATCH	Heber City	Heber Valley Medical Center	5	
Weber/Morgan Health District						
	ASSISTED LIVING - TYPE I					
		WEBER	Ogden	Beehive Homes of Ogden #2	10	
		WEBER	Ogden	Beehive Home of Ogden	10	
		WEBER	Ogden	Gardens Assisted Living	74	
		WEBER	Roy	Beehive Homes of Roy	10	
	ASSISTED LIVING - TYPE II					
		WEBER	North Ogden	Emeritus Estates	126	
		WEBER	Riverdale	Stoney Brooke	16	
		WEBER	South Ogden	Regent Assisted Living	113	
		WEBER	Washington Terrace	Washington House	91	
		WEBER	West Haven	Peach Tree Place of West Haven	64	
	INTERMEDIATE CARE FOR MENTALLY RETARDED					
		WEBER	Ogden	Wide Horizons Care Center	83	
	NURSING CARE FACILITY					
		WEBER	Ogden	Infinia at Ogden	104	80
		WEBER	Ogden	Wasatch Care Center	69	67
		WEBER	Ogden	South Ogden Rehab Center	155	109

LICENSED NURSING AND ASSISTED LIVING FACILITIES: UTAH, 2002 *(Continued)*

District Name	Type	County	City	Provider Name	No. Licensed Beds as of April 1-2, 2002	No. Actual Available Beds as of March 11, 2002
Weber/Morgan Health District (continued)						
	NURSING CARE FACILITY *(continued)*					
		WEBER	Ogden	Mt. Ogden Nursing and Rehabilitation	108	106
		WEBER	Ogden	Aspen Care Center	72	72
		WEBER	Ogden	Crestwood Care Center	88	88
		WEBER	Ogden	Washington Terrace Health Services	120	102
		WEBER	Roy	Heritage Park Care Center	176	156
		WEBER	South Ogden	Manor Care of South Ogden	140	140
	TRANSITIONAL CARE UNIT					
		WEBER	Ogden	Ogden Regional Medical Center TCU	12	12
		WEBER	Ogden	McKay-Dee Transitional Care Center	20	31

APPENDIX C. CALCULATION METHOD FOR TABLE 8

Table 8. Projected Nursing Home Bed Needs for 2005 and 2010 in Utah

Year	1989 Estimates	2000 Actual	2005 Projection	2010 Projection
Utah Population Aged 65+	147,068	**190,222 Cell A**	**205,659 Cell J**	236,675
Actual Number of Medicaid/Medicare Certified Nursing Home Beds	7,138	**7,594 Cell B**		
Total Number of Nursing Home Patients		**5,590 Cell C**	**6,046 Cell K**	6,958
Number of Nursing Home Beds Per 10,000 65+	485	**399 Cell D**		
Number of Nursing Home Patients Per 10,000 65+		**294 Cell E**	**294 Cell L**	294
Number of Nursing Home Beds Per 10,000 65+ at 90% Occupancy Rate		**327 Cell F**	**327 Cell M**	327
Ideal Number of Beds Needed at 90% Occupancy Rate		**6,211 Cell G**	**6,718 Cell N**	7,731
Ideal Number of Beds Needed at 85% Occupancy Rate		**6,576 Cell H**	**7,113 Cell O**	8,186
Ideal Number of Beds Needed at 80% Occupancy Rate		**6,988 Cell I**	**7,558 Cell P**	8,698

Sources: The population census information is from the U.S. Census Bureau. The population estimates and projections are from the Utah Governor's Office of Planning and Budget. The number of nursing home beds and patients are from the Utah Bureau of Program Certification and Resident Assessment.

Data source or calculation for each cell:

Cell A – Utah 2000 Census
Cell B – Utah Bureau of Program Certification and Resident Assessment
Cell C – Utah Bureau of Program Certification and Resident Assessment
Cell D = (Cell B / Cell A) * 10,000
Cell E = (Cell C / Cell A) * 10,000
Cell F = Cell E / 0.9
Cell G = Cell C / 0.9
Cell H = Cell C / 0.85
Cell I = Cell C / 0.8
Cell J – Projection made by the Utah Governor's Office of Planning and Budget
Cell K = (Cell L * Cell J) / 10,000
Cell L = Cell E
Cell M = Cell F
Cell N = Cell K / 0.9
Cell O = Cell K / 0.85
Cell P = Cell K / 0.8